

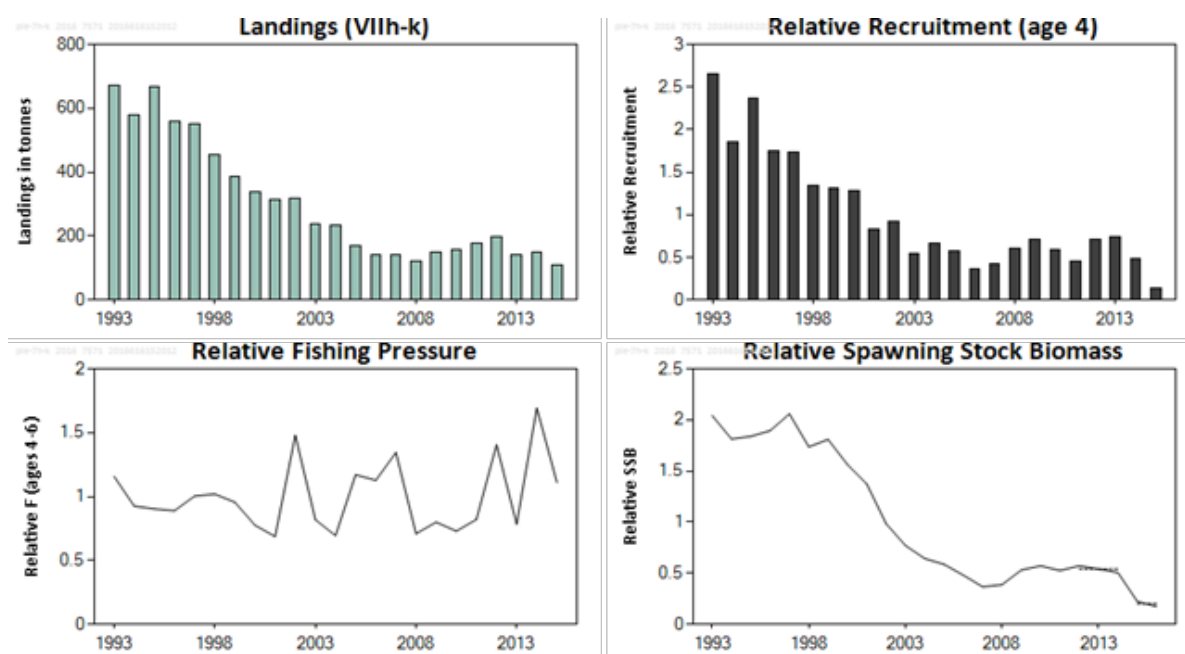
### 5.3.54 Plaice (*Pleuronectes platessa*) in divisions 7.h–k (Celtic Sea South and southwest of Ireland)

#### ICES stock advice

ICES advises that when the precautionary approach is applied, landings in 2017 should be no more than 86 tonnes. ICES cannot quantify the corresponding total catches.

#### Stock development over time

This is a trend-based assessment. Spawning-stock biomass (SSB) has been lower than average since 2002 and the 2016 SSB is the lowest of the time-series. Fishing mortality (F) is highly variable but shows no long-term trend. Recruitment-at-age 4 in 2015 was also the lowest in the time-series.



**Figure 5.3.54.1** Plaice in divisions 7.h–k. Summary of stock assessment based on divisions 7.j–k. ICES landings in the full assessment area (divisions 7.h–k). Recruitment, F, and SSB values are relative to the average of the time-series. The dashed lines in the relative SSB plot indicate the average values of the respective years.

#### Stock and exploitation status

**Table 5.3.54.1** Plaice in divisions 7.h–k. State of the stock and fishery relative to reference points.

		Fishing pressure			Stock size		
		2013	2014	2015	2014	2015	2016
Maximum sustainable yield	$F_{MSY}$ proxy	✗	✗	✗ Above proxy	MSY	?	?
Precautionary approach	$F_{pa}$ , $F_{lim}$	?	?	?	$B_{trigger}$	?	?
Management plan	$F_{MGT}$	-	-	- Not applicable	$B_{pa}$ , $B_{lim}$	?	?
Qualitative evaluation	-	✗	✗	✗ Above possible reference	$SSB_{MGT}$	-	-
					-	➔	➡
							✗ Declined to the lowest observed

Note: The state of the stock evaluation is based on reference point proxy (ICES, 2016a) and relative change for fishing pressure.

### Catch options

The ICES framework for category 3 stocks was applied (ICES, 2012). An XSA model for the divisions 7.j–k part of the stock 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 landings.

The Index is estimated to have decreased by more than 20% and thus the uncertainty cap was applied. The precautionary buffer was applied previously (ICES, 2013), but the stock remains in an undesirable state so the precautionary buffer has been applied in this advice.

Discarding is known to take place, but ICES cannot quantify the corresponding catch.

**Table 5.3.54.2** Plaice in divisions 7.h–k. For stocks in ICES data category 3 one catch option is provided.

Index A (2015–2016)		0.20
Index B (2012–2014)		0.54
Index ratio (A/B)		0.37
Uncertainty cap	Applied	0.8
Recent advised landings for 2016		135 t
Discard rate		Unknown
Precautionary buffer	Applied	0.8
Landings advice*		86 t

\* [Recent advised landings] × [uncertainty cap] × [precautionary buffer].

### Basis of the advice

**Table 5.3.54.3** Plaice in divisions 7.h–k. The basis of the advice.

Advice basis	Precautionary approach
Management plan	There is no management plan for plaice in this area.

### Quality of the assessment

The advice is based on an assessment accepted for trends, used as an indicator of stock size because discards are considered significant and are not included in the assessment and the available landings-at-age data do not cover the Division 7.h component of the area and fishery. The uncertainty associated with the index values is not available.

The assessment is carried out on the landings in Divisions 7.j and 7.k and therefore ICES is unable to assess stock trends in Division 7.h. However, the advice takes into account the landings from divisions 7.h–k.

The apparent reduction in SSB in 2015 is mainly driven by a reduction in relative abundance of young fish in recent years. However, it is unclear whether this lack of young fish in the landings (and commercial tuning LPUE index) is due to increased discarding or poor recruitment.

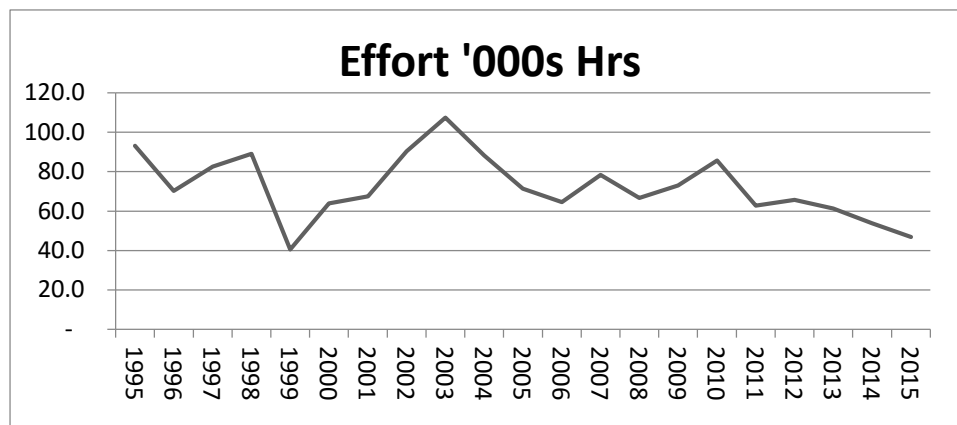
### Issues relevant for the advice

The catches are taken in a mixed fishery and should be managed as such.

Total otter trawl effort in Division 7.j has declined in recent years (Figure 5.3.54.2) and this has not resulted in a reduction of fishing mortality.

Because plaice is caught in distinct areas, restricting effort in areas where plaice are caught will be more effective than limiting total landings.

Additionally, management measures should focus on reducing catches of small plaice.



**Figure 5.3.54.2** Plaice in divisions 7.h–k. Total Irish otter trawl effort in Division 7.j

### Reference points

**Table 5.3.54.4** Plaice in divisions 7.h–k. Reference points, values, and their technical basis.

Framework	Reference point	Value	Technical basis	Source
MSY approach	MSY $B_{\text{trigger proxy}}$	-	No proxy identified	ICES (2016a)
	$F_{\text{MSY proxy}}^*$	0.25	$F_{0.1}$ (ages 4–6), from age-based yield-per-recruit analysis using long-term average	ICES (2016a)
Precautionary approach	$B_{\text{lim}}$	Not defined		
	$B_{\text{pa}}$	Not defined		
	$F_{\text{lim}}$	Not defined		
	$F_{\text{pa}}$	Not defined		
Management plan	$SSB_{\text{MGT}}$	Not applicable		
	$F_{\text{MGT}}$	Not applicable		

\*The current assessment is indicative of trends only and is therefore not considered to be comparable to the  $F_{\text{MSY}}$  proxy reference point estimate.

### Basis of the assessment

**Table 5.3.54.5** Plaice in divisions 7.h–k. The basis of the assessment.

ICES stock data category	3 ( <a href="#">ICES, 2016b</a> )
Assessment type	Age-based analytical assessment (XSA) indicative of stock trends (ICES, 2016c).
Input data	Commercial landings (international landings from divisions 7.j and 7.k, Irish age compositions from landings sampling); commercial tuning index (IRL-VMS-OTB), maturity and natural mortality data are assumed to be the same as for plaice in divisions 7.f and 7.g.
Discards and bycatch	Discards are known to take place but cannot be reliably quantified owing to limited sampling; therefore they are not included.
Indicators	None
Other information	None
Working group report	Working Group for the Celtic Seas Ecoregion ( <a href="#">WGCSE</a> )

## Information from stakeholders

There is no available information.

## History of the advice, catch, and management

**Table 5.3.54.6** Plaice in divisions 7.h–k. History of ICES advice, the agreed TAC, and the official and ICES estimates of landings. Weights are in tonnes.

Year	ICES advice	Predicted landings corresp. to advice	Agreed TAC	Official landings	ICES landings
1993	-	-	-	672	655
1994	-	-	-	578	577
1995	-	-	-	667	542
1996	-	-	-	560	453
1997	-	-	-	551	645
1998	-	-	-	454	444
1999	-	-	-	385	406
2000	-	-	-	337	299
2001	-	-	1215	313	261
2002	-	-	1080	316	313
2003	Reduce TAC to recent average (1998–2000)	450	582	237	217
2004	Reduce TAC to recent average (2000–2002)	320	466	232	221
2005	Reduce TAC to recent average (2001–2003)	271	466	170	164
2006	Reduce TAC to recent average (2002–2004)	245	396	143	147
2007	Reduce TAC to recent average (2003–2005)	196	337	142	120
2008	Reduce TAC to recent average (2004–2006)	177	303	122	135
2009	Same advice as last year	177	256	148	148
2010	Reduce TAC	-	218	156	155
2011	See scenarios	-	185	179	178
2012	Reduce catches		176	199	196
2013	Decrease catches by 36% (20% decrease, followed by 20% PA reduction)	< 100	141	141	182
2014	Decrease landings by 4% (20% increase, followed by 20% PA reduction)	< 135	135	148	169
2015	The same landings advice as for 2014	< 135	135	107	114
2016	Precautionary approach (same advised value as for 2015)	≤ 135	135		
2017	Precautionary approach (36% reduction in advised landings)	≤ 86			

## History of catch and landings

**Table 5.3.54.7** Plaice in divisions 7.h–k. Catch distribution by fleet in 2015 as estimated by ICES.

Total catch (2015)	Landings			Discards
Unknown	74% otter trawl	19% beam trawl	8% other/unknown gear types	Discards in Division 7.h are unknown. Discards in divisions 7.j and 7.k are in the order of 35% of the catch for otter trawls (average 2007–2015).
	114 tonnes			

**Table 5.3.54.8** Plaice in divisions 7.h–k. History of commercial official landings for each country participating in the fishery and ICES estimates.

Year	Divisions 7.j and 7.k					Division 7.h					7.j and 7.k	7.h	Divisions 7.h–k	
	BEL	FRA	IRL	UK	OTH	BEL	FRA	IRL	UK	OTH	*		Official	ICES est.
1993	0	8	383	46	0	0	56	0	179	0	437	235	672	655
1994	0	6	251	60	0	0	42	20	199	0	317	261	578	577
1995	0	12	317	90	0	0	48	4	196	0	419	248	667	542
1996	0	3	295	38	0	0	45	10	117	52	336	224	560	453
1997	0	6	337	32	0	0	63	7	106	0	375	176	551	645
1998	0	8	282	16	0	0	41	4	90	13	306	148	454	444
1999	42	0	296	15	0	3	0	3	67	1	311	74	385	406
2000	4	16	195	9	5	0	38	5	67	2	225	112	337	299
2001	0	16	157	6	3	27	34	3	67	0	182	131	313	261
2002	14	21	155	5	2	55	24	0	54	0	183	133	316	313
2003	4	7	125	9	6	16	25	2	47	0	147	90	237	217
2004	0	5	87	6	6	67	27	4	30	0	104	128	232	221
2005	0	4	88	2	0	32	16	2	26	0	94	76	170	164
2006	1	6	63	1	1	22	31	2	17	0	71	72	143	147
2007	2	9	72	2	11	7	21	0	18	2	94	48	142	120
2008	3	5	72	1	1	25	7	0	11	0	79	43	122	135
2009	4	7	71	2	0	1	37	0	30	0	80	68	148	148
2010	5	11	66	1	0	0	44	0	34	0	78	78	156	155
2011	6	11	67	2	0	4	47	6	42	0	80	99	179	178
2012	7	17	93	0	0	2	45	6	36	0	110	89	199	196
2013	0	14	51	0	0	0	35	1	40	0	65	76	141	182
2014	0	11	74	0	0	4	40	4	15	0	85	63	148	169
2015**	0	10	23	0	0	5	50	2	17	0	33	73	107	114

\* Excluding Belgium.

\*\* Preliminary.

## Summary of the assessment

**Table 5.3.54.9** Plaice in divisions 7.h–k. Assessment summary. Landings in tonnes. Recruitment, SSB, and fishing mortality are relative to the average of the time-series.

Year	Relative recruitment Age 4 <sup>†</sup>	Relative SSB	Landings (divisions 7.h–k)	Landings (divisions 7.j–k)*	Relative fishing mortality Ages 4–6
1993	2.648	2.043	672	437	1.157
1994	1.849	1.813	578	317	0.925
1995	2.36	1.839	667	419	0.903
1996	1.754	1.895	560	336	0.889
1997	1.729	2.058	551	375	1.003
1998	1.335	1.737	454	306	1.02
1999	1.313	1.808	385	311	0.955
2000	1.288	1.563	337	225	0.775
2001	0.835	1.374	313	182	0.687
2002	0.915	0.986	316	183	1.478
2003	0.543	0.771	237	147	0.819
2004	0.66	0.644	232	104	0.695
2005	0.573	0.587	170	94	1.171
2006	0.368	0.48	143	71	1.127
2007	0.419	0.368	142	94	1.344
2008	0.598	0.388	122	79	0.709
2009	0.708	0.531	148	80	0.8
2010	0.584	0.572	156	78	0.729
2011	0.456	0.526	179	80	0.821
2012	0.704	0.572	199	110	1.405
2013	0.74	0.541	141	65	0.784
2014	0.481	0.506	148	85	1.692
2015	0.139	0.225	107	33	1.11
2016		0.174			

\* Used in the assessment.

## Sources and references

ICES. 2012. ICES Implementation of Advice for Data-limited Stocks in 2012 in its 2012 Advice. ICES CM 2012/ACOM:68. 42 pp.

ICES. 2013. Plaice in Divisions VIIh–k (Southwest of Ireland). *In* Report of the ICES Advisory Committee, 2013. ICES Advice 2013, Book 5, Section 5.4.27.

ICES. 2016a. EU request to provide a framework for the classification of stock status relative to MSY proxies for selected category 3 and category 4 stocks in ICES subareas 5 to 10. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 5, Section 5.4.2.

ICES. 2016b. Advice basis. *In* Report of the ICES Advisory Committee, 2016. ICES Advice 2016, Book 1, Section 1.2.

ICES. 2016c. Report of the Working Group for the Celtic Seas Ecoregion (WGCSE), 4–13 May 2016, ICES Headquarters, Copenhagen, Denmark. ICES CM 2016/ACOM:13.

<sup>†</sup> Version 2: Relative Recruitment values corrected.