

9 Red gurnard in the Northeast Atlantic

9.1 General biology

The main biological features known for red gurnard (*Aspitrigla (Chelidonichthys) cuculus*) are described in the stock annex. This species is widely distributed in the North-east Atlantic from South Norway and North of the British Isles to Mauritania on grounds between 20 and 250 m. This benthic species is abundant in the Channel (VIIde) and on the shelf West of Brittany (7h, 8a), living on gravel or coarse sand. In the Channel, the size at first maturity is ~25 cm at 3 years old (Dorel, 1986).

9.2 Stock identity and possible assessments areas

A compilation of datasets from bottom-trawl surveys undertaken within the project 'Atlas of the marine fishes of the northern European shelf' has produced a distribution map of red gurnard. Higher occurrences of red gurnard with patchy distribution have been observed along the Western approaches from the Shetlands Islands to the Celtic Seas and the Channel.

A continuous distribution of fish crossing the Channel and the area West of Brittany does not suggest a separation of the Divisions 7d from 7e and 7h. Therefore a split of the population between the Ecoregions does not seem appropriate. Further investigations are needed to progress on stocks boundaries such as morphometric studies, tagging and genetic population studies.

9.3 Management regulations

There is currently no technical measure specifically applied to red gurnard or other gurnard species. The exploitation of red gurnard is submitted to the general regulation in the areas where they are caught. There is no minimum landing size set.

9.4 Fisheries data

Red gurnard is mainly caught as bycatch by demersal trawlers in mixed fisheries, predominantly in Divisions 7d, 7e and 7h.

9.4.1 Historical landings

Official landings reported at ICES are available in Table 9.1 and Table 9.2. Before 1977, red gurnard was not specifically reported. Still, gurnards are not always reported by species, but rather as mixed gurnards. This makes interpretations of the records of official landings difficult.

International landings have fluctuated between 3646 tonnes and 5171 tonnes since 2006. France is the main contributor of 'red gurnard' landings, with around 80% of landings coming from ICES Subarea 7d-h (Celtic Sea/English Channel). In the North Sea red gurnard landings are variable, but roughly evenly distributed between Divisions 4a,b and c. Landings from the west of Scotland and Ireland, and the Irish Sea (ICES Subarea 6a-b, 7a-c, 7j) and Bay of Biscay (ICES Division 8) have been consistently low.

9.4.2 Discards

This year discard data for red gurnard was provided for 2015 and 2016 through Inter-catch for the first time (table 9.3). For those countries which provided data, discard rates ranged between from 14% and 94% of catch in 2016 (table 9.4).

9.5 Survey data

Information on gurnard abundance are available from the IBTS-Q1 survey in the North Sea, Scottish West Coast Groundfish Survey, Irish Groundfish Survey and the French EVHOE-WIBTS-Q4 survey in the Celtic Sea and Bay of Biscay and CGFS-Q4 in Division 7d. Each of these surveys covers a specific area of red gurnard distribution. Lengths at age are available from CGFS-Q4 in and IGFS-Q4

- IBTS-Q1 series

Before 1990, red gurnard was scarce in North Sea and the abundance index was close to 0. The abundance index of red gurnard has trended generally upwards between 1994 – 2013, before declining somewhat, although it remains well above long-term average values. This change reflects an increase of the abundance in the northern and central North Sea (4a-b).

- CGFS-Q4 series

Over the time-series 1988–2011, the abundance index has fluctuated, peaked in 1994, reached a low in 2011, but is above long term mean in 2016.

- EVHOE-WIBTS-Q4 series

Over the period 1997–2011, the abundance index in Nb or kg/hr has increased over time. Age reading of red gurnards caught during EVHOE survey has been carried out in 2006 and routinely since 2008. They indicate that the individuals caught are mainly of age 1 and 2.

9.6 Biological sampling

Number at length information was provided by French and Spanish landings and discards, and for Irish discards. There remains a lack of regular sampling for red gurnard in commercial landings and discarding to provide series of length or age compositions usable for a preliminary analytical assessment.

9.7 Biological parameters and other research

There is no update of growth parameters and available parameters from several authors are summarized in the Stock Annex. They vary widely. Available length–weight relationships are also shown in Stock Annex. Natural mortality has not been estimated in the areas studied at this Working Group.

9.8 Analyses of stock trends

In the North Sea, the appearance of red gurnard in the index of the IBTS Survey since 1990 is in line with an increase of the abundance in 4a. In Eastern Channel, the abundance index of the CGFS-Q4 survey has widely fluctuated, with a weak decline. The EVHOE-WIBTS-Q4 survey has slightly increased since its beginning in the 1990s.

9.9 Data requirements

Still, gurnards are not always reported by species, but rather as mixed gurnards. This makes interpretations of the records of official landings difficult. Indices of red gurnard from UK (Scotland) and Irish surveys in the Celtic Seas Ecoregion should be made available. Extending the studied area by a survey in 7e and collecting length and age data of red gurnard in the main area of production should help in better understanding the biology and dynamics of this species in the area.

9.10 References

Dorel, D. 1986. Poissons de l'Atlantique nord-est relations taille-poids. Institut Francais de Recherche pour l'Exploitation de la Mer. Nantes, France. 165 p.

Table 9.1 Red gurnard in the Northeast Atlantic official landings by country in tonnes

Year	Belgium	Spain	France	Jersey	Guernsey	Ireland	IM	Netherlands	Portugal	UK	Total
2006	313	0	4551		10	0	0	57	125	115	5171
2007	327	0	4495		0	0	0	66	127	156	5171
2008	353	0	4045		0	0	0	92	112	166	4768
2009	227	0	3307		0	0	1	160	150	262	4107
2010	238	0	3426		2	0	0	251	115	363	4395
2011	306	0	3169		3	0	1	295	135	256	4165
2012	305	0	2697		4	25	0	329	148	257	3765
2013	287	576	3152		6	15	2	267	112	329	4746
2014	262	400	3787		5	0	5	241	112	285	5098
2015	187	82	2922		3	0	0	213	1	342	3750
2016*	237	85	2598	3	1	9	1	224	110	378	3646
2016**	236	73	2616			9		235		378	3547

*Preliminary Data,

**Intercatch Data

Table 9.2 Red gurnard in the Northeast Atlantic official landings by area in tonnes

Year	4a	4b	4c	5b	6a	6b	7a	7b	7c	7d	7e	7f	7g	7h	7j	7nk	8a	8b	8c	8d	9a	9nk	10 a	10nk	14a	Total
2006	13	83	64	0	32	1	10	9	12	1102	2803	230	16	446	5	1	153	60	1	5	9	115	0	1	0	5171
2007	12	120	55	2	21	0	7	7	15	1229	2670	247	15	437	4	0	139	59	3	2	125	0	0	2	0	5171
2008	34	63	55	0	28	3	5	7	16	1236	2443	249	9	408	5	0	66	25	3	1	109	0	3	0	0	4768
2009	58	58	92	0	95	2	4	7	6	1292	1550	112	23	510	7	0	98	40	1	3	148	0	1	0	0	4107
2010	79	63	86	0	101	46	14	8	10	1531	1609	132	23	433	9	0	100	34	0	2	114	0	0	1	0	4395
2011	66	29	52	0	69	54	13	5	6	1295	1753	124	20	372	9	0	112	46	2	3	133	0	1	0	1	4165
2012	83	71	79	0	51	7	7	2	5	1245	1438	145	53	293	2	0	83	50	8	1	136	4	1	0	1	3765
2013	88	108	60	0	47	0	9	2	6	1193	1690	169	58	477	2	0	79	72	532	1	154	0	2	0	0	4749
2014	102	51	69	0	47	3	8	1	2	1294	1639	115	19	1069	1		82	75	363	3	132		2		0	5077
2015	133	102	53	0	58	1	4	3	1	790	1553	87	6	703	1		95	69	81	2	128		2			3872
2016*	111	82	117	0	75	1	10	3	1	905	1270	114	16	608	1		87	63	54	1	125		1			3645

*Preliminary Data,

Table 9.3 Red gurnard in the Northeast Atlantic, discards (t) by country, 2015 – 2016.

Country	2015	2016
France	1323	2249
Ireland	10	147
Spain		286
UK (ENG)	74	30
UK (SCO)	649	411
Total	2057	3125

Table 9.4. Discarding of Red gurnard in the Northeast Atlantic, as a percentage of catch, by country, in 2016.

Country	Discard rate (%)
France	46
Ireland	94
Spain	75
UK (ENG)	14
UK (SCO)	68