

16 Other deep-water species in the Northeast Atlantic

16.1 The fisheries

The following species are considered in this chapter: common mora (*Mora moro*) and Moridae, rabbit fish (*Chimaera monstrosa*, *Rhinochimaera atlantica* and *Hydrolagus* spp), Alepocephalidae including Baird's smoothhead (*Alepocephalus bairdii*) and Risso's smoothhead (*A. rostratus*), wreckfish (*Polyprion americanus*), blackbelly rosefish (*Helicolenus dactylopterus*), silver scabbardfish (*Lepidopus caudatus*), deep-water cardinal fish (*Epigonus telescopus*) Mediterranean slimehead, also known as silver roughy (*Hoplostethus mediterraneus*), Black gemfish (*Nesiarchus nasutus*) Atlantic thornyhead (*Trachyscorpia cristulata*), greater eelpout (*Lycodes esmarkii*), Norway redfish (*Sebastes viviparus*) and deep-water red crab (*Chaceon affinis*). Deepsea sharks are not considered as these species are in the remit of WGEF. The species considered include all teleost species from annex 1 of Council Regulation (EC) 2016/2336.

Mora, rabbitfish, smoothheads, blackbelly rosefish and deep-water cardinal fish are taken as by-catch in mixed-species demersal trawl fisheries in Subareas 6, 7 and 12 and to a lesser extent, 2, 4 and 5.

In Subarea 14b, Baird's smoothhead, rabbit fish and species of Moridae are caught as bycatch in demersal trawl fisheries for Greenland halibut (*Reinhardtius hippoglossoides*) but are most likely under reported in official reports from the area.

Mora, wreckfish, blackbelly rosefish and silver scabbardfish are caught in targeted and mixed species longline fisheries in Subareas 8, 9 and 10.

Deep-water red crab were formerly caught in directed trap fisheries principally in Subareas 6 and 7. This fishery reduced strongly from 826 tonnes in 2007 to 125 t in 2008 and have remained at a similar level since.

Although in annex 1 of Council Regulation (EC) 2016/2336 black gemfish and eelpouts (not only greater eelpout but all eelpouts were searched in catch statistics) were never landed from fisheries operating in the ICES area from 2006 to 2017.

16.1.1 Landings trends

Landings reported to ICES are presented in Tables 16.1–16.11, based on ICES catch statistics using historical nominal catches 1950-2010 and official nominal catches 2006-2018, downloaded from the ICES website in April 2021. For species not included in previous WGDEEP reports (Mediterranean slimehead, black gemfish, Atlantic thornyhead, Norway redfish) only data from 2006 to 2017 were extracted. Catch data in 2019 and 2020 were not available as they were not included in preliminary catch statistics and were not reported to InterCatch either. Formorid, wreckfish and blackbelly rosefish, 2019 landings from The Azores were available.

Mora moro and Moridae have been landed in variable quantity over time from subareas 6 to 10. Landings of chimaerids peaked to around 1000 t in the early 2000s and have shown large year-to-year variations since. Landings of smoothheads peaked to level over 10 000 tonnes in the early 2000s and have been around 400 tonnes in recent years. Landings of wreckfish peaked to more than 1000 tonnes in 2007. The main area is Subarea 10, where landings seem to be on a declining trend. Blackbelly rosefish is landed from subareas 6 to 10, in variable yearly quantity averaging to about 1000t per year. Silver scabbardfish is mostly landed from subareas 8, 9 and 10, landing

have decline since the late 1990s. More than 1000 t/year of deepwater cardinal fish was landed in the early 2000. Landings almost ceased in recent years.

Mediterranean slimehead was landed in variable amount with greater quantities from Subarea 9 in years 2012–2015. Atlantic thornyhead was landed in small amount, typically less than one tonne per year from subareas 6, 7 and 8. Norway redfish was mostly landed from Subarea 5, in declining quantity over 2010–2017.

16.1.2 ICES Advice

ICES has not previously given specific advice on the management of any of the stocks considered in this chapter.

16.1.3 Management

No TACs are set for any of these species in EC waters or in the NEAFC Regulatory Area. None of these species were included in Appendix I of Council Regulation (EC) No 2347/2002 meaning that vessels were not required to hold a deep-water fishing permit in order to land them; they are therefore not necessarily affected by EC regulations governing deep-water fishing effort. They are now included in the Council Regulation (EC) 2016/2336 repealing the previous one.

16.2 Stock identity

No information available.

16.3 Data available

16.3.1 Landings and discards

Landings for all these species are presented in Tables 16.1–16.9. In 2021, other deep-water species landings were updated based on Official Nominal Catches 2006–2018 from the ICES website. Data for 2019–2020 were not available to the expert group.

In 2016, some data provided to the working group were not suitable. One country reported species which are not deep-water species, such as coastal Rajidae, another reported American plaice (*Hippoglossoides platessoides*) and Spotted wolffish (*Anarhichas minor*).

In some cases, considerable differences exist between the working group data and therefore, the official catch number for these species are presented in Tables 16.10–16.12. In Subareas 6 and 12 landings of silver scabbardfish are suspected to be misreported (probably of black scabbardfish, *Aphanopus carbo*) as the occurrence of the species is not supported by scientific evidence. These issues remain unresolved but need to be explored further.

The reported landings of blackbelly rosefish was high in 2016 and 2017 but similar to 2012–2013.

16.3.2 Length compositions

For several species data on length compositions are available from survey data. Length distributions of blackbelly rosefish in the Spanish Porcupine survey is shown in Figure 16.1 while Figure 16.2 presents the length–frequency distributions from the Spanish bottom-trawl survey in the Northern Spanish Shelf (SP-NGFS) in Divisions 9a and 8c. Trends in mean length of blackbelly rosefish in the French EVHOE survey (Bay of Biscay) is shown in Figure 16. 3. The cumulated

length distribution of silver scabbardfish, common mora and wreckfish in Azorean surveys are presented in Figures 16.4, 16.5 and 16.6, respectively.

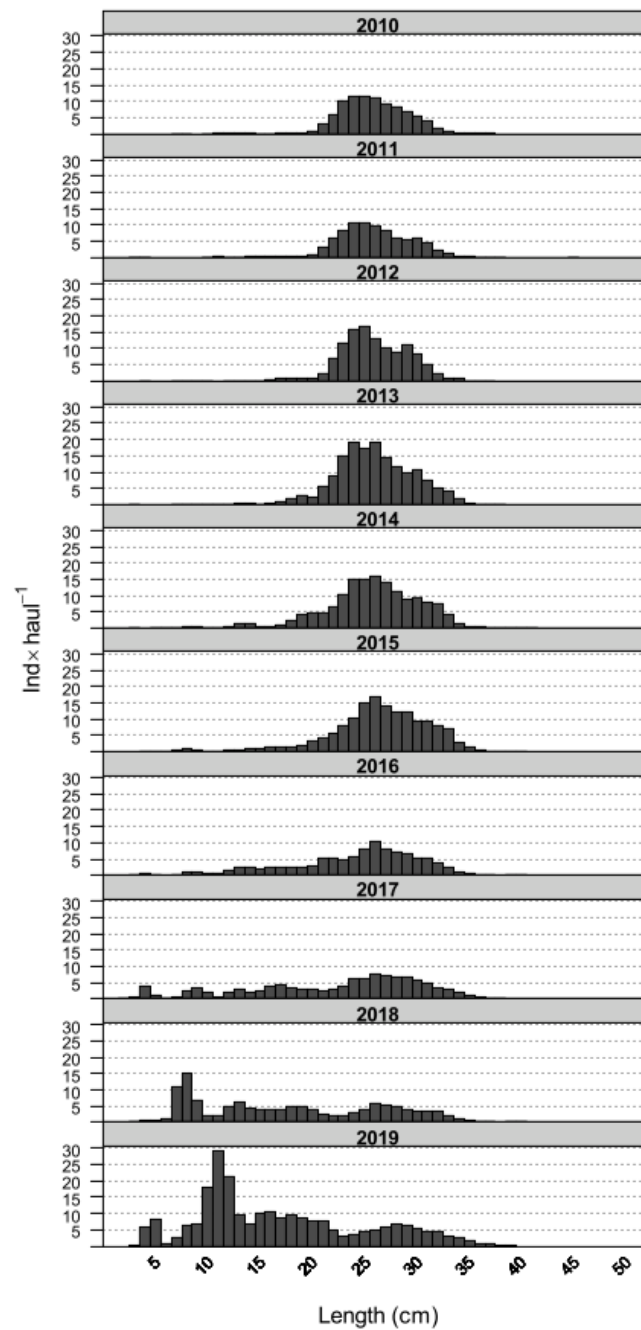


Figure 16.1. Mean stratified length distributions of *Helicolenus dactylopterus* in Porcupine surveys (2010-2019).

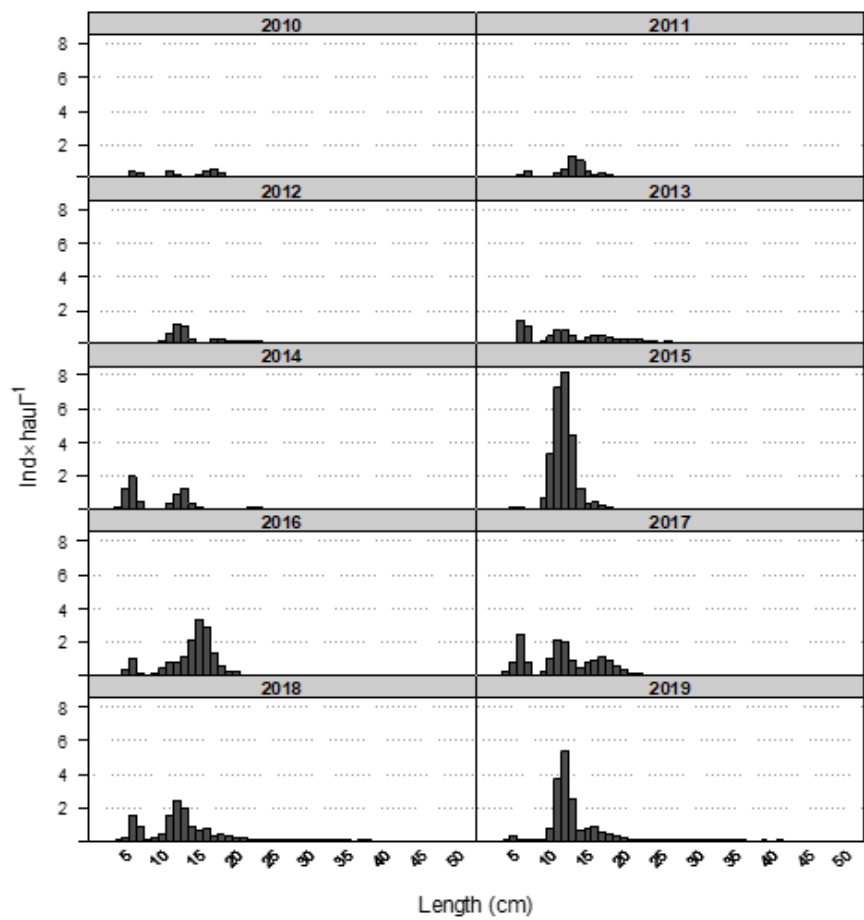


Figure 16.2. Mean stratified length distributions of bluemouth (*H. dactylopterus*) in Northern Spanish Shelf surveys (2010–2019).

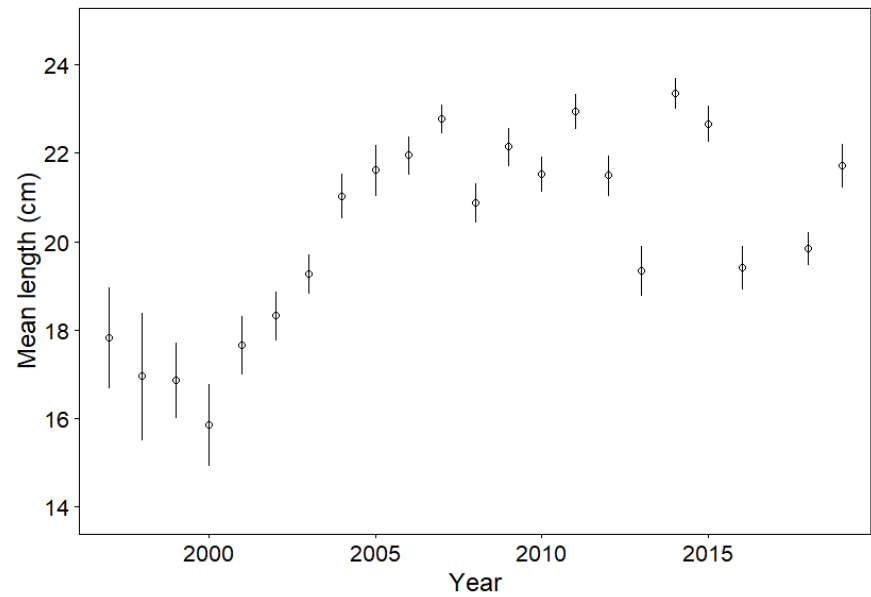


Figure 16.3 Mean length of *Helicolenus dactylopterus* in the French survey in Bay of Biscay and Celtic Sea (EVHOE) from 1997 to 2019 (no survey in 2017).

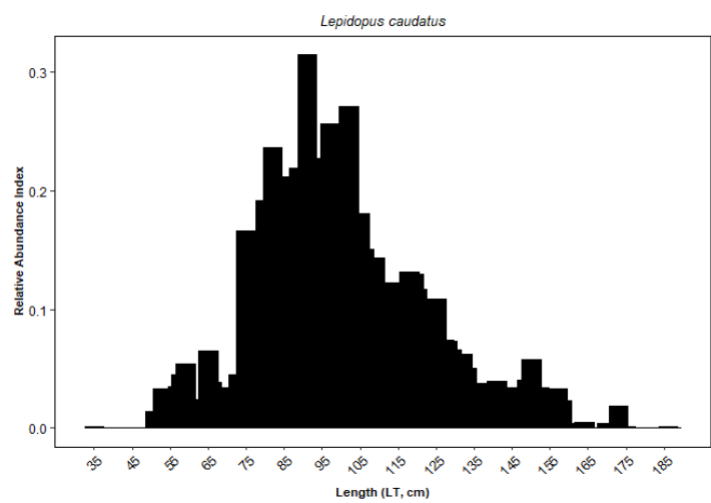


Figure 16.4. Mean length of *Lepidopus caudatus* in Azores bottom longline survey 1995–2016.

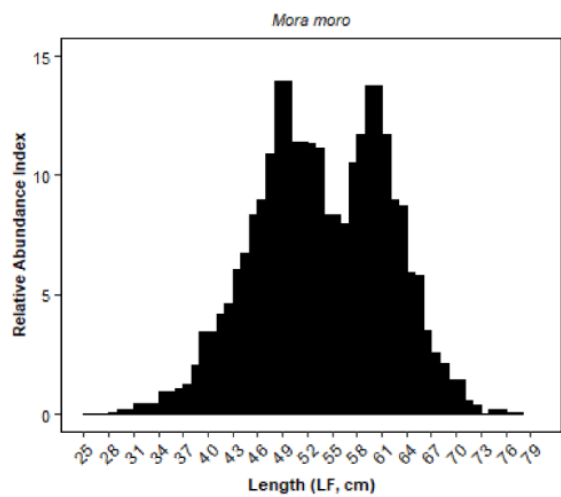


Figure 16.5. Mean length of *Mora moro* in Azores bottom longline survey 1995–2016.

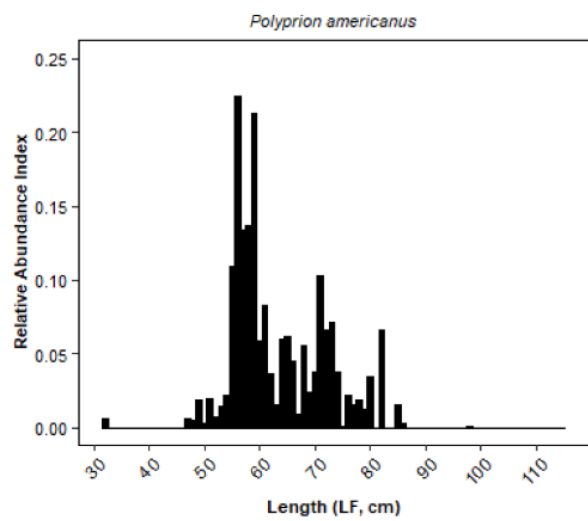


Figure 16.6. Mean length of *Polyprion americanus* in Azores bottom longline survey 1995–2016.

16.3.3 Age compositions

No new information.

16.3.4 Weight-at-age

No new information.

16.3.5 Maturity and natural mortality

No new information.

16.3.6 Catch, effort and research vessel data

For blackbelly rosefish standardized indices from the Spanish Porcupine Bank Survey (abundance and biomass), the French EVHOE survey in the Celtic Sea and Bay of Biscay (biomass), the Spanish bottom-trawl survey (SP-NGFS) in Divisions 9.a and 8.c and the Portuguese longline survey in the Azores Islands (abundance) and are given in Figures 16.7–16.11.

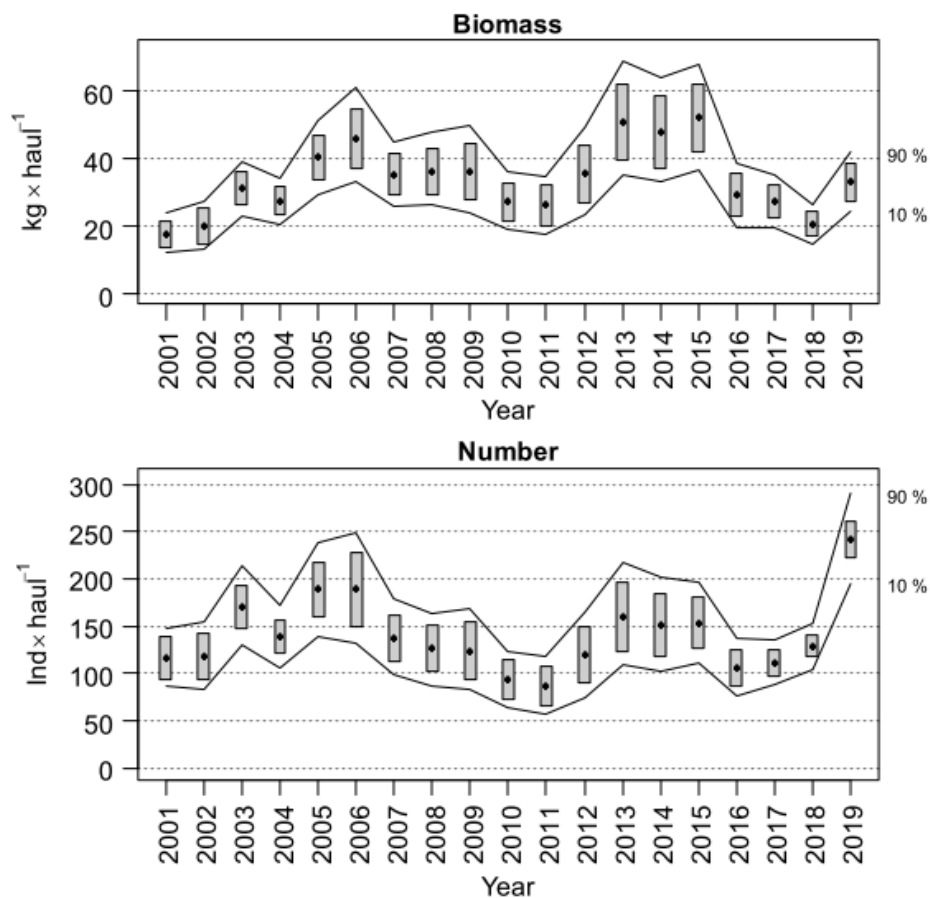


Figure 16.7. Trends of *Helicolenus dactylopterus* biomass and abundance indices during Porcupine Survey time-series (2001–2019). Boxes mark parametric standard error of the stratified abundance index. Lines mark bootstrap confidence intervals ($\alpha = 0.80$, bootstrap iterations = 1000).

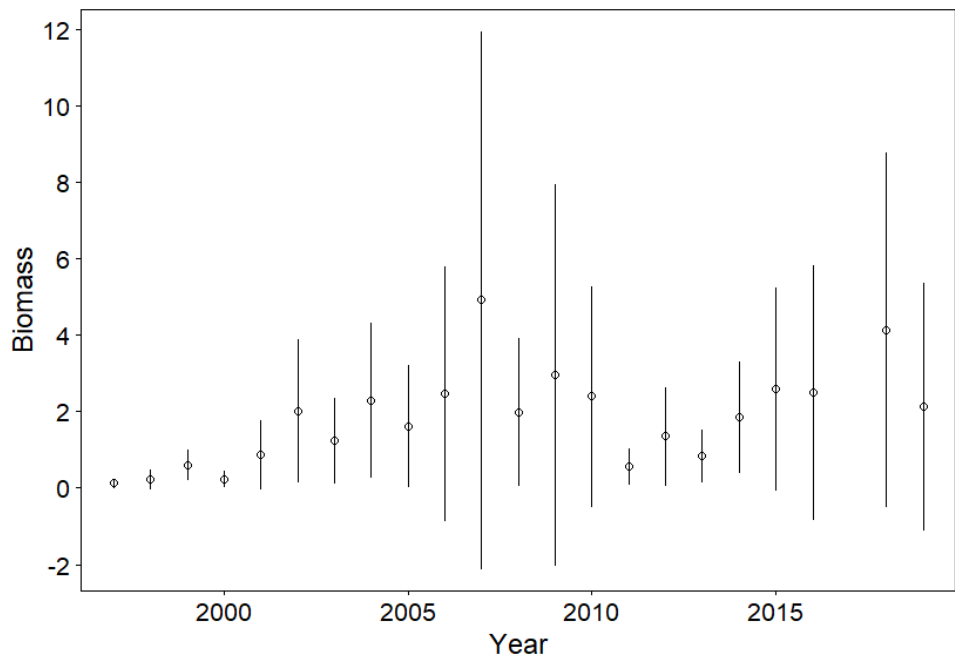


Figure 15.8. Survey biomass index from the French survey (EVHOE) for *Helicolenus dactylopterus*.

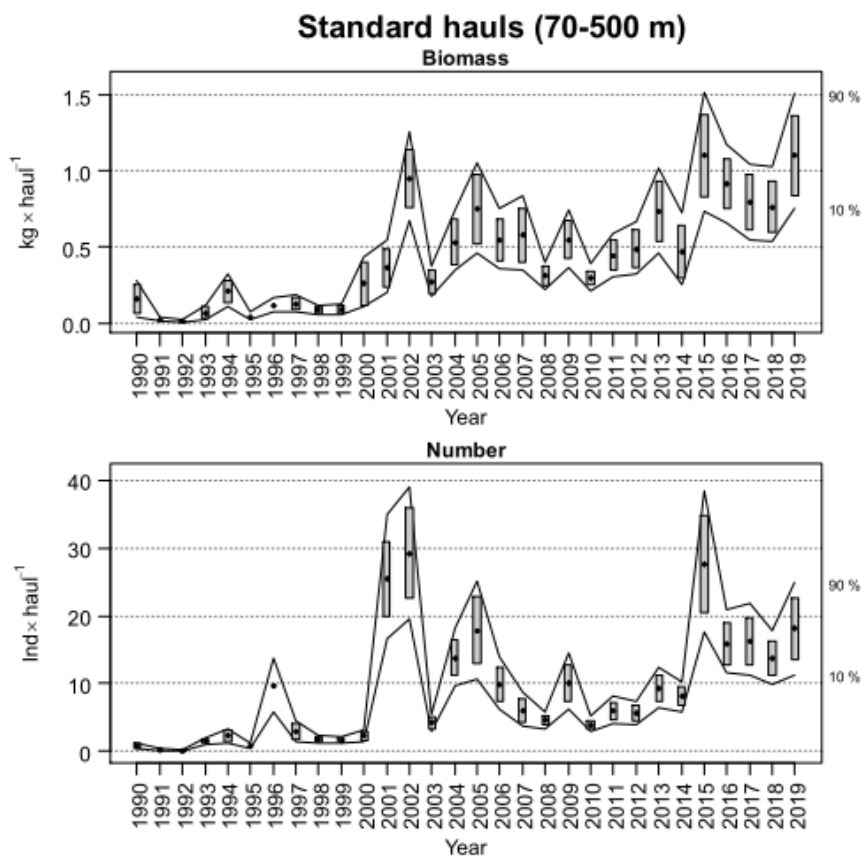


Figure 16.9. Evolution of *Helicolenus dactylopterus* mean stratified biomass and abundance in Northern Spanish Shelf surveys time-series (1990–2019). Boxes mark parametric standard error of the stratified biomass index. Lines mark bootstrap confidence intervals ($\alpha=0.80$, bootstrap iterations = 1000).

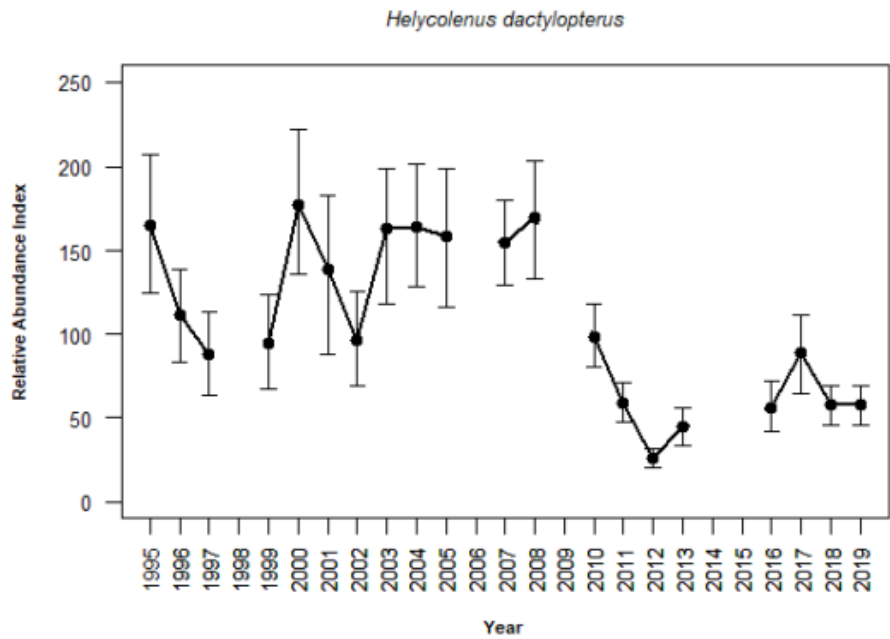


Figure 16.10. Annual bottom longline survey abundance index for *Helicolenus dactylopterus* in Azorean bottom longline surveys.

Abundance indices for silver scabbardfish, common mora and wreckfish from the Portuguese longline survey in the Azores Islands are given in Figures 16.11 to 16.13.

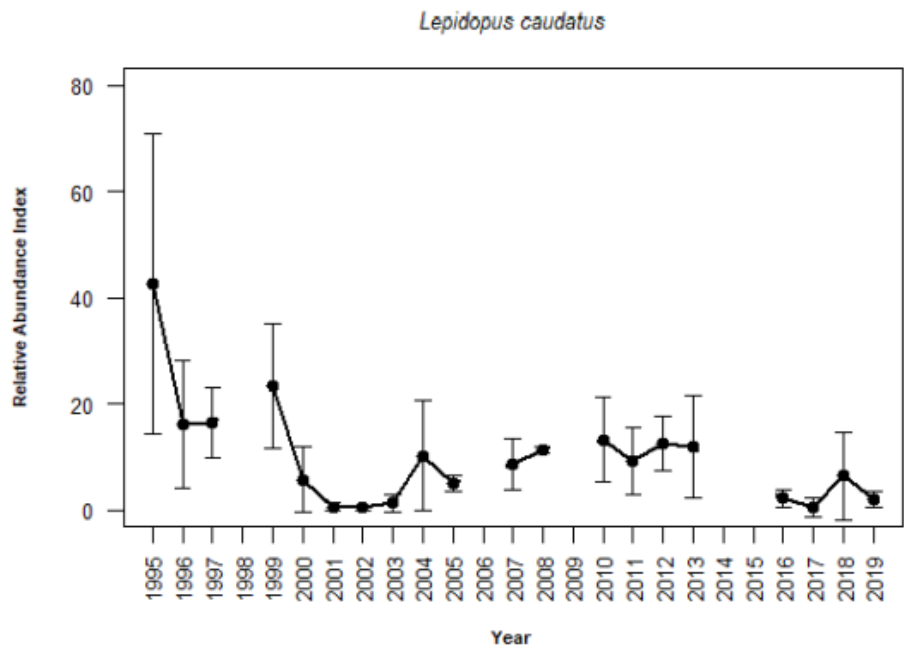


Figure 16.11. Annual bottom longline survey abundance index for *Lepidopus caudatus* in Azorean bottom longline surveys.

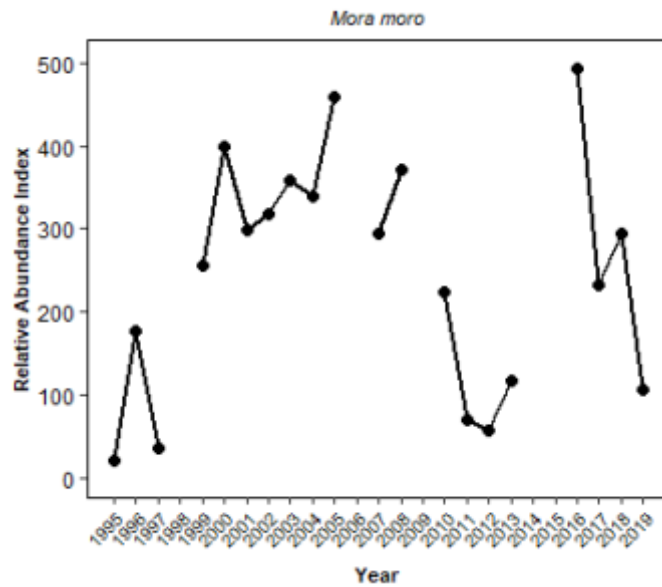


Figure 16.12. Annual bottom longline survey nominal cpue for *Mora moro* in Azorean bottom longline surveys.

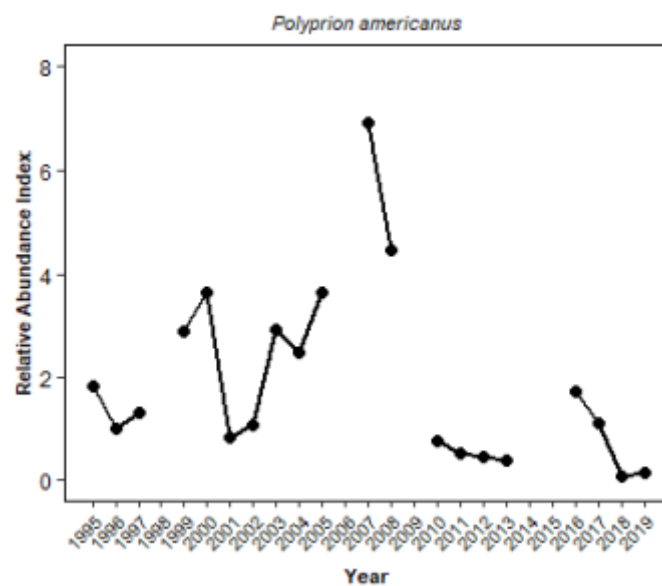


Figure 16.13. Annual bottom longline survey nominal cpue for *Polyprion americanus* in Azorean bottom longline surveys.

16.3.7 Data analysis

No new analyses were carried out in 2020. Updated surveys series from several species are included in working documents WD18, WD20, WD21.

16.3.8 Comments on the assessment

16.3.9 Management considerations

Currently no advice is required for these stocks.

Table 16.1. Official landings of *Mora moro* and *Moridae* (t).

Year	2	5b	6 and 7	8 and 9	10	12	14b	TOTAL
1988								
1989								
1990					2			2
1991		5	1		4			10
1992			25					25
1993			10					10
1994			10					10
1995				83				83
1996				52				52
1997				88				88
1998			41					41
1999		1	20					21
2000	8	3	159	25		1		196
2001	1	100	194	25		87		407
2002	1	19	159	10	100	13		302
2003		8	327	12	125	15	7	494
2004		1	71	15	87	4		178
2005		1	63	19	69			152
2006		5	111	45	92			253
2007		8	64	18	86			176
2008		4	57	4	53			118
2009		1		5	68			74
2010		11	1	4	54			70
2011		7	86	4	55			152
2012		5	71	1	31			108
2013			99	1	52			152
2014				1	54			55
2015				51	92			92
2016		1	40					41

Year	2	5b	6 and 7	8 and 9	10	12	14b	TOTAL
2017		3	30	62	169			264
2018					140*			140
2019					146*			146
* Only data from Azores								

Table 16.3. Official landings of rabbitfish (t) (*Chimaera monstrosa* and *Hydrolagus* spp).

Year	1 and 2	3 and 4	5a	5b	6 and 7	8	9	12	14	TOTAL
1991			499							499
1992		122	106							228
1993		8	3							11
1994		167	60		2					229
1995			106	1						107
1996		14	32							46
1997		38	16					32		86
1998		56	32		2			42		132
1999		47	9	3	237	2		114		412
2000	6	34	6	54	404	2		48		554
2001	7	23	1	96	797	7		79		1010
2002	15	24		64	570	6		98	1	778
2003	57	25	1	61	469	2		80	4	699
2004	22	40		100	444	6		128	5	745
2005	77	171		63	571	14		249	1	1146
2006	29	17	1	62	325	10			5	449
2007	64	2	1	78	391	3				539
2008	81	12	1	49	370	3				516
2009	89	6	2	6	47			70		220
2010	197	21	7	5	31			25		286
2011	150	7	4	2	88					251
2012	104	17	4	29	475	2		434		1065
2013	103	40	2	30	160	1		56		392

Year	1 and 2	3 and 4	5a	5b	6 and 7	8	9	12	14	TOTAL
2014		4		32	131	4		77		178
2015	79	14		25	30			1		149
2016	78	49		40	225	15	31	4		364
2017	69	32		105	174	1			1	382

Table 16.4. Official landings of Baird's smoothhead (t).

Year	5a	5b	6 and 7	12	14	TOTAL
1991			31			31
1992	10		17			27
1993	3			2		5
1994	1					1
1995	1					1
1996				230		230
1997				3692		3692
1999				4643		4643
1999				6549		6549
2000			978	4146	12	5136
2001			5305	3132		8897
2002			260	12 538	661	13 459
2003			393	6883	632	7908
2004		6	2657	4368	245	7276
2005		1	5978	6928		12 412
2006			4966	3512		8150
2007			2565	1781		4140
2008			896	744		1611
2009			295	508		803
2010			511	317		828
2011			187	252		252
2012			335	472		472
2013			342	351		693

Year	5a	5b	6 and 7	12	14	TOTAL
2014			235 0+	228		463
2015			127 3+	91		218
2016			131	258		389
2017	14		156	326		496
2018			77*	323*		400*
* Only data from Spain						

Table 16.5. Official landings of wreckfish (t).

Wreckfish (<i>Polyprion americanus</i>) All areas				
Year	6 and 7	8 and 9	10	TOTAL
1980			38	38
1981			40	40
1982			50	50
1983			99	99
1984			131	131
1985			133	133
1986			151	151
1987			216	216
1988	7	198	191	396
1989		284	235	519
1990	2	163	224	389
1991	10	194	170	374
1992	15	270	240	525
1993		350	315	665
1994		410	434	844
1995		394	244	638
1996	83	294	243	620
1997		222	177	399
1998	12	238	140	390
1999	14	144	133	291

Wreckfish (<i>Polyprion americanus</i>) All areas				
2000	14	123	263	400
2001	17	167	232	416
2002	9	156	283	448
2003	2	243	270	515
2004	2	141	189	332
2005		195	279	474
2006		331	497	828
2007	2	553	662	1217
2008	3	317	513	833
2009	8	13	382	403
2010	3	5	238	246
2011		150	266	416
2012		256	226	482
2013			209	209
2014		95	121	216
2015			116	116
2016	4	19	101	124
2017	9	114	131	254
2018			89*	89*
2019			80*	80*
* Only data from Azores				

Table 16.6. Official landings of blackbelly rosefish (t).

Year	3 and 4	5b	6	7	8 and 9	10	TOTAL
1980						18	18
1981						22	22
1982						42	42
1983						93	93
1984						101	101
1985						169	169

Year	3 and 4	5b	6	7	8 and 9	10	TOTAL
1986						212	212
1987						331	331
1988						439	439
1989			79	48	2	481	610
1990	4		69	31	5	480	589
1991	5		99	29	12	483	628
1992	3		112	47	11	575	748
1993	1		87	65	8	650	811
1994	2		62	55	4	708	831
1995	2		62	9		589	662
1996	2		77	10		483	572
1997	1		78	10	1	410	500
1998			53	92	3	381	529
1999	8	64	194	160	29	340	795
2000		16	213	119	33	441	822
2001			177	102	34	301	614
2002			81	115	18	280	494
2003			184	213	124	338	859
2004	2	3	142	291	135	282	855
2005			103	204	206	190	703
2006			59	160	287	209	715
2007			61	259	293	274	887
2008			105	193	214	281	752
2009			182	14	75	267	450
2010			195	6	120	213	294
2011			176	14	149	231	400
2012		2	161	944	1332	190	2629
2013			121	20	1320	235	1696
2014			25	23	141	200	389

Year	3 and 4	5b	6	7	8 and 9	10	TOTAL
2015		+	+			256	256
2016			452	516	537	306	1811
2017		3	135	647	595	344	1724
2018						283*	283*
2019						187*	187*
* Only data from Azores							

Table 16.7. Official landings of silver scabbardfish (t).

	6 and 7	8 and 9	10	12	TOTAL
1980			13		13
1981			6		6
1982			10		10
1983			43		43
1984			38		38
1985			28		28
1986			65		65
1987			30		30
1988		2666	70		2736
1989		1385	91	102	1578
1990		584	120	20	724
1991		808	166	18	992
1992		1374	2160		3534
1993	2	2397	1724	19	4142
1994		1054	374		1428
1995		5672	788		6460
1996		1237	826		2063
1997		1725	1115		2840
1998		966	1187		2153
1999	18	3069	86		3173
2000	17	16	27		60

	6 and 7	8 and 9	10	12	TOTAL
2001	6	706	14		726
2002	1	1832	10		1843
2003		1681	25		1706
2004		836	29		865
2005	57	527	31		615
2006	377	624	35	3	1039
2007	88	649	55	1	793
2008	40	845	63	0	948
2009	44	898	64	25	1031
2010	32	829	68	43	972
2011		927	148	82	1157
2012	655	36	271	244	1206
2013	200		361	123	648
2014	253		713	88	1056
2015			429	41	470
2016	188	134	87	33	442
2017	62	146	112	29	349
2018	<1*		73*	13*	86*
2019			65*		65*
*Only data from Spain and Azores					

Table 16.8. Official landings of deep-water cardinal fish (t).

Year	5b	6	7	8 and 9	10	12	TOTAL
1990					3		3
1991					11		11
1992							0
1993		15	15				30
1994	4	35	182				221
1995	3	20	71				94
1996	8	13	32				53

Year	5b	6	7	8 and 9	10	12	TOTAL
1997	8	27	22				57
1998		86	29				115
1999	8	54	224	3			289
2000	2	121	181	5	3		312
2001	7	109	284	4			404
2002		97	888	8	14		1007
2003	2	47	1031	5	16	1	1102
2004	1	30	843	10	21	2	907
2005		50	637	8	4		699
2006		30	383	12	10		435
2007		6	218	19	7		250
2008		19	5	6	7		37
2009		8	2	130	7		147
2010		4	6		5		15
2011		3	2	128	5		138
2012		16	4	2	4		26
2013		10	1	1	4		16
2014		4	1	2	2		9
2015					4		4
2016					6		6
2017		12		3	8		23

Table 16.9. Official estimates of landings of deep-water red crab (t).

Year	4and5	6	7	8 and 9	12	Total
1995		6	4			12
1996	20	1288	77	2	17	1413
1997	58	139	48	11	4	437
1998	35	313	34	188	2	384
1999	642	289	46		3	980
2000	38	580	108			726

Year	4and5	6	7	8 and 9	12	Total
2001	13	335	20			368
2002	29	972	21		6	1028
2003	26	960	123		92	1201
2004	21	546	115		13	695
2005	94	626	184		15	1230
2006	16	185	19	310		530
2007	11	732	104	85	24	957
2008	2	124	1			127
2009	0	110	75	10	115	309
2010	2	247	79	46	71	445
2011		246	148	37	43	475
2012	10	67	45	10	21	153
2013	3	91	34	18	32	178
2014	1	112	29	3	48	194
2015		151	40	26	74	291
2016		103	55	41	23	222
2017	9	102	48	21		180

Table 16.10. Official landings (t) of Mediterranean slimehead, also known as silver roughy (*Hoplostethus mediterraneus*) by ICES Subarea from 2006 to 2017.

Year	27.7	27.8	27.9
2006	0	0	0.7
2007	0	0	0
2008	0	0	0.01
2009	0	0	0.01
2010	0	0	14
2011	0	0	3.38
2012	0	0	27.26
2013	0	0.82	34.93
2014	0	3.85	36.11
2015	0	6.9	14.98

Year	27.7	27.8	27.9
2016	0	2.68	1.62
2017	0.25	2.33	1.06

Table 16.11. Official landings (t) of Atlantic thornyhead (*Trachyscorpia cristulata*) by ICES Subarea from 2006 to 2017.

Year	27.4	27.6	27.7	27.8
2006	0	0	0.01	26
2007	0.01	4.6	13.73	1.41
2008	0	2.8	4.2	0.62
2009	0	1.6	4.61	0.6
2010	0	0	0	0
2011	0	0.38	2.59	0.4
2012	0	0.06	4.43	0.36
2013	0.01	0.07	2.05	0.48
2014	0	0	0.92	0.72
2015	0	0	0.75	0.58
2016	0	0.45	0.14	0.29
2017	0	0.02	0.26	0.04

Table 16.12. Official landings (t) of Norway redfish (*Sebastes viviparus*) by ICES Subarea from 2006 to 2017.

Year	27.2	27.5	27.6	27.12	27.14
2006	13	0	0	0	0
2007	7.3	0	0	0	0
2008	0	0	0	0	0
2009	0	0	0	0	0
2010	0	2600.7	0	0	0
2011	0	1415	0	0	10
2012	0	532	0	1	1
2013	0	532	0	0	0
2014	1	546	0	0	4
2015	0	468	0	0	0
2016	0	0	0.3	0	0

Year	27.2	27.5	27.6	27.12	27.14
2017	0	170	0	0	0