

ANNEX XIV

Abundance (n), biomass (kg) and discard rates in number (n/h) and weight (kg/h) for each fish and cephalopod species discarded by crustacean trawl (CT) and fish trawl (FT). In bold are represented the 93 discarded fish and cephalopod species used for the statistical analysis.

Bycatch and discards of commercial trawl fisheries in the South coast of Portugal

Species	Métier	ABUNDANCE	BIOMASS	DISCARD RATE	
		(n)	(kg)	(n/h)	(kg/h)
<i>Abralia veranyi</i>	CT	120	0.255	0	0.001
<i>Alepocephalidae</i> n.i.	CT	4	0.034	0	<0.001
<i>Alloteuthis media</i>	CT	6	0.019	0	<0.001
	FT	2845	8.921	29	0.090
<i>Alloteuthis</i> spp.	FT	773	1.341	8	0.014
<i>Alloteuthis subulata</i>	CT	744	2.707	3	0.010
	FT	8574	37.913	74	0.323
<i>Alosa fallax</i>	FT	32	10.350	0	0.063
<i>Anthias anthias</i>	FT	500	14.673	5	0.124
<i>Argentina sphyraena</i>	FT	3311	28.668	23	0.199
<i>Argyropelecus aculeatus</i>	CT	1	0.002	0	<0.001
<i>Arnoglossus imperialis</i>	CT	43	0.702	0	0.002
	FT	6122	89.376	48	0.660
<i>Arnoglossus laterna</i>	CT	10	0.435	0	0.001
	FT	2687	29.178	23	0.248
<i>Arnoglossus rueppelii</i>	CT	350	3.319	1	0.011
	FT	2331	23.613	15	0.158
<i>Arnoglossus</i> spp.	FT	426	4.984	4	0.043
<i>Arnoglossus thori</i>	CT	2	0.027	0	<0.001
	FT	6279	60.220	52	0.494
<i>Atherina presbyter</i>	FT	260	1.758	2	0.016
<i>Balistes capriscus</i>	FT	308	231.457	2	1.625
<i>Belone belone</i>	CT	2	0.122	0	<0.001
<i>Benthodesmus elongatus</i>	CT	252	26.564	1	0.053
<i>Beryx decadactylus</i>	CT	4	1.597	0	0.003
<i>Beryx splendens</i>	CT	10	1.310	0	0.003
<i>Blennius ocellaris</i>	FT	389	5.986	3	0.043
<i>Boops boops</i>	CT	33	0.898	0	0.002
	FT	24292	2527.775	197	20.350
<i>Callanthias ruber</i>	CT	4	0.161	0	<0.001
<i>Callionymus lyra</i>	CT	24	0.707	0	0.003
	FT	1849	113.710	14	0.884
<i>Callionymus maculatus</i>	CT	41	0.251	0	0.001
	FT	5104	34.741	40	0.273
<i>Callionymus</i> spp.	FT	440	0.880	3	0.007
<i>Capros aper</i>	CT	18193	396.415	64	1.424
	FT	89204	1391.448	662	9.987
<i>Centrophorus granulosus</i>	CT	15	27.817	0	0.061
<i>Cepola macrophthalma</i>	FT	2171	156.522	15	1.056
<i>Chaunax pictus</i>	CT	46	1.642	0	0.004
<i>Chelidonichthys cuculus</i>	FT	9609	221.951	77	1.776
<i>Chelidonichthys lucerna</i>	CT	88	21.770	0	0.039
	FT	633	19.590	5	0.154
<i>Chelidonichthys obscurus</i>	CT	1	0.094	0	<0.001
	FT	2013	158.192	17	1.366
<i>Chimaera monstrosa</i>	CT	592	259.601	2	0.899
<i>Chlorophthalmus agassizi</i>	CT	238	6.136	1	0.013

Bycatch and discards of commercial trawl fisheries in the South coast of Portugal

Species	Métier	ABUNDANCE	BIOMASS	DISCARD RATE	
		(n)	(kg)	(n/h)	(kg/h)
<i>Citharus linguatula</i>	CT	164	6.450	1	0.020
	FT	8811	243.796	71	1.937
<i>Coelorinchus caelorinchus</i>	CT	259	2.572	0	0.005
<i>Coelorinchus occa</i>	CT	40	0.562	0	0.001
<i>Conger conger</i>	CT	2873	374.592	9	0.970
	FT	4235	403.150	34	3.175
<i>Cyttopsis rosea</i>	CT	25	0.200	0	<0.001
<i>Dalatias licha</i>	CT	32	62.606	0	0.133
<i>Deania calcea</i>	CT	839	85.000	2	0.167
<i>Deltentosteus quadrimaculatus</i>	FT	395	1.699	4	0.016
<i>Dentex macrophthalmus</i>	FT	47	2.188	0	0.018
<i>Dicologlossa cuneata</i>	CT	5	0.078	0	0.000
	FT	191	15.351	2	0.159
<i>Diplodus vulgaris</i>	CT	1	0.026	0	<0.001
	FT	95	4.599	1	0.039
<i>Dipturus batis</i>	CT	7	0.106	0	<0.001
<i>Dipturus oxyrinchus</i>	CT	136	17.449	0	0.032
<i>Diretmus argenteus</i>	CT	5	0.041	0	<0.001
<i>Echelus myrus</i>	CT	1	0.006	0	<0.001
<i>Echiodon dentatus</i>	CT	1	11.367	0	0.047
<i>Eledone cirrhosa</i>	CT	362	16.818	0	0.051
	FT	114	111.136	12	0.904
<i>Eledone moschata</i>	CT	116	0.233	0	0.001
	FT	1480	40.681	13	0.283
<i>Engraulis encrasicolus</i>	CT	10	0.510	0	0.001
	FT	1862	1.542	0	0.003
<i>Epigonus denticulatus</i>	CT	65	92.392	3	0.191
<i>Epigonus telescopus</i>	CT	89	150.558	6	0.308
<i>Etmopterus pusillus</i>	CT	1445	2.030	1	0.017
<i>Etmopterus spinax</i>	CT	2907	0.944	0	0.002
<i>Eutrigla gurnardus</i>	FT	148	0.110	0	<0.001
<i>Facciolella oxyrhyncha</i>	CT	85	33.646	11	0.097
<i>Gadella maraldi</i>	CT	10	8.280	12	0.065
<i>Gadiculus a. argenteus</i>	CT	3640	6.315	1	0.013
	FT	1570	0.136	0	<0.001
<i>Gaidropsaurus biscayensis</i>	CT	603	451.418	19	0.890
<i>Gaidropsaurus vulgaris</i>	CT	26	1.285	0	0.002
<i>Galeus melastomus</i>	CT	9354	48.233	2	0.107
<i>Halobatrachus didactylus</i>	CT	10	236.977	29	1.902
<i>Helicolenus dactylopterus</i>	CT	829	34.971	0	0.068
	FT	3761	69.252	9	0.141
<i>Hexanchus griseus</i>	CT	3	0.033	0	<0.001
<i>Hoplostethus m. mediterraneus</i>	CT	4232	0.205	0	<0.001
<i>Hymenocephalus gracilis</i>	CT	9	169.408	2	0.349
<i>Hymenocephalus italicus</i>	CT	71	194.903	23	1.486
<i>Illex coindetii</i>	CT	1022	98.257	7	0.237
	FT	3013	353.285	46	2.414

Bycatch and discards of commercial trawl fisheries in the South coast of Portugal

Species	Métier	ABUNDANCE	BIOMASS	DISCARD RATE	
		(n)	(kg)	(n/h)	(kg/h)
<i>Lepidopus caudatus</i>	CT	2249	98.257	7	0.237
	FT	6807	353.285	46	2.414
<i>Lepidorhombus boscii</i>	CT	12	1.135	0	0.002
<i>Lepidorhombus whiffiagonis</i>	CT	10	1.786	0	0.003
<i>Lepidotrigla cavillone</i>	CT	22	0.181	0	0.001
	FT	15227	445.584	148	4.361
<i>Lepidotrigla dieuzeidei</i>	FT	5784	144.330	51	1.282
<i>Lesueurigobius sanzi</i>	FT	5193	54.821	42	0.439
<i>Leucoraja naevus</i>	CT	2	0.010	0	<0.001
	FT	1042	345.812	7	2.675
<i>Loligo vulgaris</i>	CT	2	0.045	0	<0.001
	FT	1019	24.036	8	0.189
<i>Lophius budegassa</i>	CT	22	6.778	0	0.012
	FT	187	20.572	1	0.147
<i>Lophius piscatorius</i>	CT	3	0.819	0	0.002
	FT	224	34.568	1	0.149
<i>Macroramphosus gracilis</i>	CT	97	9.598	0	0.034
	FT	106474	1229.315	770	8.721
<i>Macroramphosus scolopax</i>	CT	23639	251.376	82	0.877
	FT	372861	3887.458	2925	29.821
<i>Malacocephalus laevis</i>	CT	1032	62.131	2	0.134
	FT	15	0.586	0	0.003
<i>Merluccius merluccius</i>	CT	4729	164.378	15	0.498
	FT	33118	904.551	269	7.053
<i>Microchirus azevia</i>	CT	282	3.450	1	0.007
<i>Microchirus boscanion</i>	FT	10554	183.892	88	1.538
<i>Microchirus ocellatus</i>	FT	181	6.192	2	0.052
<i>Microchirus variegatus</i>	CT	9	0.429	0	0.001
	FT	6984	237.364	55	1.829
<i>Micromesistius poutassou</i>	CT	26967	1613.235	84	4.569
	FT	37043	1285.176	251	9.022
<i>Mola mola</i>	FT	2	0.006	0	<0.001
<i>Molva molva</i>	CT	3	0.049	0	<0.001
<i>Mora moro</i>	CT	742	11.392	2	0.030
	FT	4	0.040	0	<0.001
<i>Mullus surmuletus</i>	CT	3	0.356	0	0.001
	FT	26	3.078	0	0.035
<i>Myctophidae n.i.</i>	CT	247	1.132	0	0.002
	FT	97	0.294	1	0.003
<i>Nemichthys scolopaceus</i>	CT	6	0.023	0	<0.001
<i>Neoraja iberica</i> n.sp.	CT	20	0.880	0	0.002
<i>Neorossia caroli</i>	CT	188	6.594	0	0.013
<i>Nezumia sclerorhynchus</i>	CT	9790	173.267	21	0.372
<i>Notacanthus chemnitzii</i>	CT	178	4.187	0	0.008
<i>Octopus salutii</i>	CT	45	10.658	0	0.022
	FT	32	2.889	0	0.016
<i>Octopus vulgaris</i>	FT	480	54.340	3	0.377

Bycatch and discards of commercial trawl fisheries in the South coast of Portugal

Species	Métier	ABUNDANCE	BIOMASS	DISCARD RATE	
		(n)	(kg)	(n/h)	(kg/h)
<i>Pagellus acarne</i>	CT	36	3.39	0	0.007
	FT	5677	314.23	50	2.657
<i>Pagellus bogaraveo</i>	FT	2	0.08	0	0.001
<i>Pagellus erythrinus</i>	CT	1	0.01	0	<0.001
<i>Peristedion cataphractum</i>	FT	192	1.22	1	0.005
<i>Phycis blennoides</i>	CT	850	91.76	2	0.196
<i>Phycis phycis</i>	CT	32	5.59	0	0.011
<i>Polymetme corythaeola</i>	CT	202	3.50	0	0.007
<i>Pontinus kuhlii</i>	FT	578	78.90	5	0.667
<i>Pteroctopus tetracirrhus</i>	CT	1	0.08	0	<0.001
<i>Raja asterias</i>	FT	7	3.00	0	0.037
<i>Raja clavata</i>	CT	90	16.31	0	0.045
	FT	957	172.99	7	1.253
<i>Raja miraletus</i>	FT	92	9.40	1	0.065
<i>Raja montagui</i>	CT	17	0.50	0	0.001
	FT	487	25.00	2	0.097
<i>Raja undulata</i>	CT	15	4.70	0	0.008
	FT	107	76.66	1	0.602
<i>Rossia macrosoma</i>	CT	122	8.17	0	0.025
	FT	1178	59.37	9	0.484
<i>Ruvettus pretiosus</i>	CT	16	21.81	0	0.048
<i>Sardina pilchardus</i>	CT	10	0.41	0	0.001
	FT	20772	1031.68	182	9.059
<i>Scaeurgus unicirrhus</i>	CT	79	4.45	0	0.017
	FT	1041	59.57	8	0.455
<i>Scomber colias</i>	CT	1	0.10	0	<0.001
	FT	39998	5163.01	335	42.909
<i>Scomber scombrus</i>	CT	38	2.84	0	0.009
	FT	12823	1347.54	116	11.755
<i>Scophthalmus rhombus</i>	CT	8	1.41	0	0.003
<i>Scorpaena elongata</i>	CT	4	0.01	0	<0.001
	FT	121	11.23	1	0.049
<i>Scorpaena notata</i>	CT	130	2.12	0	0.007
	FT	7634	393.81	60	3.109
<i>Scyliorhinus canicula</i>	CT	1273	175.49	3	0.387
	FT	29257	4703.42	220	35.822
<i>Scymnodon ringens</i>	CT	14	10.34	0	0.024
<i>Sepia elegans</i>	CT	163	1.63	1	0.005
	FT	4076	37.49	36	0.335
<i>Sepia officinalis</i>	FT	128	3.22	1	0.026
<i>Sepia orbignyana</i>	CT	146	3.75	0	0.013
	FT	3121	82.28	25	0.649
<i>Sepietta obscura</i>	FT	133	0.18	1	0.002
<i>Sepietta oweniana</i>	CT	184	0.50	1	0.001
	FT	257	0.94	2	0.008
<i>Sepiola atlantica</i>	FT	44	0.20	0	0.002
<i>Serranus cabrilla</i>	FT	596	46.32	5	0.360

Bycatch and discards of commercial trawl fisheries in the South coast of Portugal

Species	Métier	ABUNDANCE	BIOMASS	DISCARD RATE	
		(n)	(kg)	(n/h)	(kg/h)
<i>Serranus hepatus</i>	CT	119	2.496	0	0.008
	FT	51820	1286.720	410	10.197
<i>Setarches guentheri</i>	CT	23	3.176	0	0.006
<i>Sphoeroides pachygaster</i>	CT	175	38.089	0	0.068
<i>Spicara maena</i>	CT	4	0.090	0	<0.001
<i>Spondyliosoma cantharus</i>	CT	3	0.125	0	<0.001
	FT	907	96.447	8	0.842
<i>Stomias boa boa</i>	CT	30	0.207	0	<0.001
<i>Symphurus ligulatus</i>	CT	1864	19.472	6	0.066
	FT	55	1.009	0	0.005
<i>Symphurus nigrescens</i>	CT	45	0.214	0	<0.001
<i>Synaphobranchus kaupii</i>	CT	1035	8.628	3	0.023
<i>Synchiropus phaeton</i>	CT	143	0.801	0	0.003
	FT	254	3.705	2	0.026
<i>Todarodes sagittatus</i>	CT	4	3.143	0	0.007
<i>Todaropsis eblanae</i>	CT	375	33.156	1	0.068
	FT	324	26.203	3	0.169
<i>Torpedo marmorata</i>	CT	2	3.699	0	0.008
	FT	61	5.536	0	0.047
<i>Torpedo nobiliana</i>	CT	348	220.285	1	0.708
<i>Trachinus draco</i>	CT	3	0.188	0	<0.001
	FT	324	22.669	3	0.178
<i>Trachurus mediterraneus</i>	FT	835	98.292	6	0.699
<i>Trachurus picturatus</i>	CT	48	9.411	0	0.015
	FT	4507	480.057	38	3.998
<i>Trachurus trachurus</i>	CT	258	45.343	1	0.080
	FT	3450	256.986	30	2.209
<i>Trachyrinchus scabrus</i>	CT	5	0.062	0	<0.001
<i>Trigla lyra</i>	CT	13	0.004	0	<0.001
	FT	950	20.726	7	0.162
<i>Trigloporus lastoviza</i>	CT	94	12.084	0	0.023
	FT	790	25.429	6	0.188
<i>Venefica proboscidea</i>	CT	1091	17.419	3	0.048
<i>Zenopsis conchifera</i>	FT	17	0.358	0	0.002
<i>Zeus faber</i>	FT	2419	139.122	19	0.991