

GENERAL STATISTICS OF THE EUROPEAN AND ASSOCIATED PURSE-SEINE FISHERY IN THE INDIAN OCEAN FROM 1981 TO 1998

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RÉSUMÉ

Ce document présente un bref résumé des principales activités de la flottille des senneurs européens (France, Espagne, Italie et pavillons associés d'armements européens) dans l'océan Indien depuis le début de cette pêcherie en 1981 : prises par espèce et type de pêche (bancs libres et sur objets flottants), effort et échantillonnage des tailles et de la composition spécifique de la capture.

La description des principales procédures de collecte des statistiques, d'échantillonnage et d'estimation sont documentés dans un document spécifique (WPDCS/99/09) présenté à la réunion du groupe de travail permanent sur la collecte des données et les statistiques.

ABSTRACT

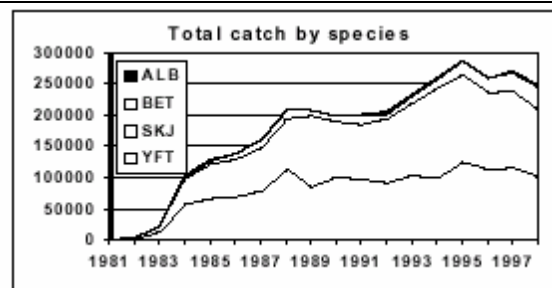
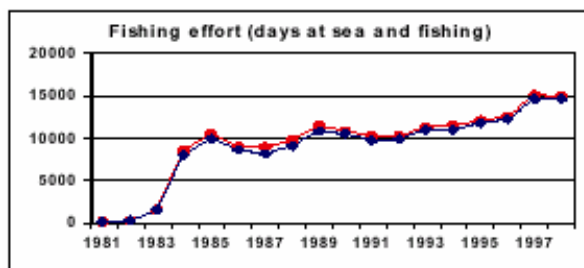
This document presents a brief summary of the main general activities of the European purse-seine fishery (France, Italy, Spain and other flags from European fishing companies) in the Indian Ocean since the beginning of their fishery in 1981: catch by species and fishing type (log and free swimming schools), effort and sampling for sizes and species composition.

The description of statistics gathering, sampling and processing procedures are reported in a specific document (WPDCS/99/09) presented at the meeting of the Permanent Working Group on Data and Statistics.

CATCH AND EFFORT STATISTICS

Table 1 – Total effort and catch by species of the European and associated purse seine fishery in the Indian Ocean, 1981-1998.

Year	Days at sea	Fishing day	YFT	SKJ	BET	ALB	Total
1981	87	84	199	163	10	0	372
1982	287	256	1028	1027	8	0	2063
1983	1614	1543	11166	9748	248	0	21162
1984	8473	8023	56456	41884	3561	558	102459
1985	10486	9893	65772	55266	6160	726	127924
1986	9031	8595	68610	60483	9951	179	139223
1987	8983	8194	78335	68292	12682	239	159548
1988	9699	9105	112780	82822	13812	266	209680
1989	11442	10857	84058	115181	9997	6	209242
1990	10875	10581	101070	87932	10489	317	199808
1991	10253	9692	96378	88465	14237	2243	201323
1992	10311	9883	91272	102534	8277	3257	205339
1993	11410	11046	102597	117287	12156	1290	233330
1994	11426	11008	98622	144563	13718	2574	259477
1995	12177	11804	124405	140612	22561	1255	288833
1996	12630	12295	113000	124410	21863	1526	260798
1997	15099	14694	115884	123396	30536	1960	271775
1998	14965	14576	101485	108076	36679	1377	247617

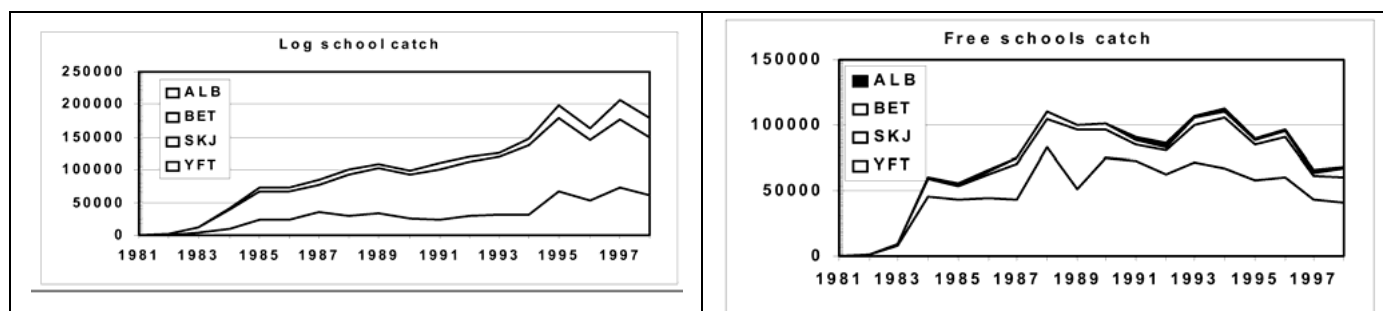


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Table 2 - Total catch by species and fishing type (free and log schools) of the European and associated purse seine fishery in the Indian Ocean, 1981-1998.

Year	Floating objects				Free schools				Total
	YFT	SKJ	BET	ALB	Total	YFT	SKJ	BET	
1981	62	123	10	0	195	137	40	0	177
1982	391	912	8	0	1311	637	115	0	752
1983	3595	8003	240	0	11838	7571	1745	8	9324
1984	10673	29062	2102	7	41844	45783	12822	1459	60615
1985	22836	44617	4793	20	72266	42936	10649	1367	55658
1986	24213	41851	7642	0	73706	44397	18632	2309	65517
1987	34862	41002	8318	4	84186	43473	27290	4364	75362
1988	30161	61375	8079	0	99615	82619	21447	5733	110065
1989	33298	68931	6943	0	109172	50760	46250	3054	100070
1990	26367	66223	5558	157	98305	74703	21709	4931	101503
1991	23124	76521	10573	55	110273	73255	11944	3664	91050
1992	29225	83387	6799	15	119426	62047	19147	1478	85912
1993	30931	89097	6544	10	126583	71667	28190	5612	106747
1994	31308	105874	10038	90	147310	67315	38689	3679	112167
1995	66795	112901	18932	53	198680	57611	27711	3630	90153
1996	52280	93846	18044	97	164267	60720	30564	3819	96531
1997	72315	105427	28445	196	206383	43568	17969	2092	65392
1998	60995	88231	30317	138	179681	40490	19845	6363	67936



CATCH PER UNIT OF EFFORT STATISTICS

Table 3 – Number of sets (total, positive and nil), catch per positive sets (total and by species, log and free schools combined) and for both log and free schools separated of the European and associated purse seine fishery in the Indian Ocean, 1981-1998.

Year	Catch	Number of Sets			Total	Catch per positive Set					
		Total	Positive	Nil		YFT	SKJ	BET	ALB	Log	Free
1981	372	43	33	10	11.3	6.0	4.9	0.3	0.0	9.8	13.6
1982	2063	143	105	38	19.6	9.8	9.8	0.1	0.0	20.8	17.9
1983	21162	1121	810	311	26.1	13.8	12.0	0.3	0.0	25.8	26.5
1984	102459	5894	3527	2367	29.0	16.0	11.9	1.0	0.2	36.6	25.4
1985	127924	6993	4533	2460	28.2	14.5	12.2	1.4	0.2	37.0	21.6
1986	139223	7320	4206	3114	33.1	16.3	14.4	2.4	0.0	38.2	28.8
1987	159548	8603	5526	3077	28.9	14.2	12.4	2.3	0.0	30.4	27.3
1988	209680	9377	5955	3422	35.2	18.9	13.9	2.3	0.0	41.4	31.0
1989	209680	9013	5939	3074	35.2	14.2	19.4	1.7	0.0	34.0	36.7
1990	209242	8967	5910	3057	33.8	17.1	14.9	1.8	0.1	35.5	32.3
1991	199808	7802	5486	2319	34.8	17.1	16.8	2.4	0.4	32.6	37.8
1992	201323	8792	6226	2566	32.1	14.7	16.5	1.3	0.5	35.8	28.0
1993	205339	9045	5951	2329	36.2	17.2	19.7	2.0	0.2	35.0	37.8
1994	233330	9817	6623	2368	37.8	14.9	21.8	2.1	0.4	35.8	40.4
1995	259477	9775	7023	2229	37.6	17.7	20.0	3.2	0.2	38.7	35.5
1996	288833	10053	7352	1903	33.5	15.4	16.9	3.0	0.2	33.2	34.1
1997	260798	10334	8508	1824	29.0	13.6	14.5	3.6	0.2	29.3	28.0
1998	271775	10698	8294	2388	27.5	10.5	15.5	3.7	0.2	27.0	29.0
1998	247617										

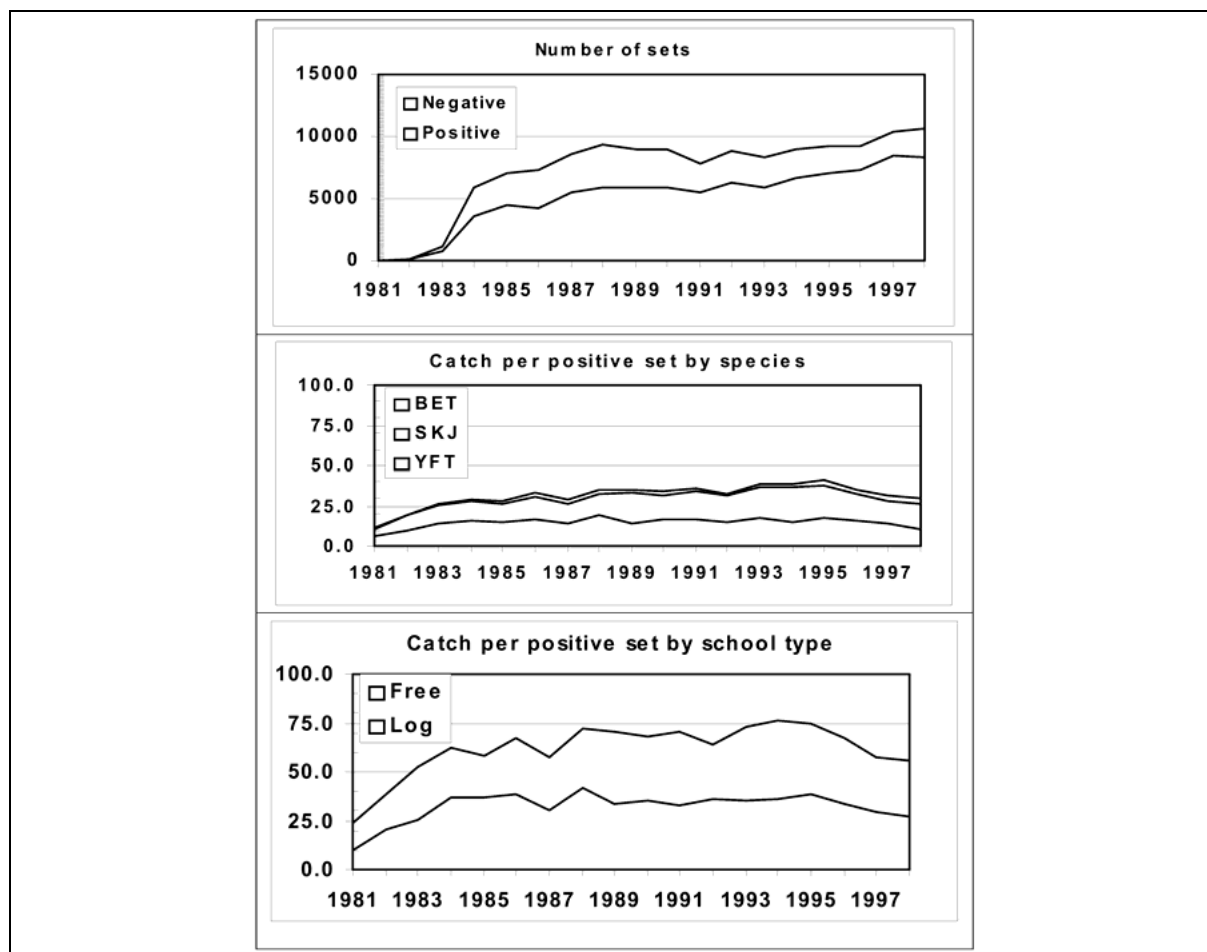


Table 4 – Total annual effort (fishing and searching days), catch by species (log and free schools) and nominal catch rates (tons per fishing day, log and free schools combined) of the European and associated purse seine fishery in the Indian Ocean, 1981-1998.

Year	Effort (days)		Floating objects			Free schools			Nominal catch rates		
	Fishing	Searching	YFT	SKJ	BET	YFT	SKJ	BET	YFT	SKJ	BET
1981	84		62	123	10	137	40	0	2.4	1.9	0.1
1982	256		391	912	8	637	115	0	4.0	4.0	0.0
1983	1543		3595	8003	240	7571	1745	8	7.2	6.3	0.2
1984	8023		10673	29062	2102	45783	12822	1459	7.0	5.2	0.4
1985	9893		22836	44617	4793	42936	10649	1367	6.6	5.6	0.6
1986	8595		24213	41851	7642	44397	18632	2309	8.0	7.0	1.2
1987	8194		34862	41002	8318	43473	27290	4364	9.6	8.3	1.5
1988	9105		30161	61375	8079	82619	21447	5733	12.4	9.1	1.5
1989	10857		33298	68931	6943	50760	46250	3054	7.7	10.6	0.9
1990	10581		26367	66223	5558	74703	21709	4931	9.6	8.3	1.0
1991	9692		23124	76521	10573	73255	11944	3664	9.9	9.1	1.5
1992	9883		29225	83387	6799	62047	19147	1478	9.2	10.4	0.8
1993	11046		30931	89097	6544	71667	28190	5612	9.3	10.6	1.1
1994	11008		31308	105874	10038	67315	38689	3679	9.0	13.1	1.2
1995	11804		66795	112901	18932	57611	27711	3630	10.5	11.9	1.9
1996	12295		52280	93846	18044	60720	30564	3819	9.2	10.1	1.8
1997	14694		72315	105427	28445	43568	17969	2092	7.9	8.4	2.1
1998	14576		60995	88231	30317	40490	19845	6363	7.0	7.4	2.5

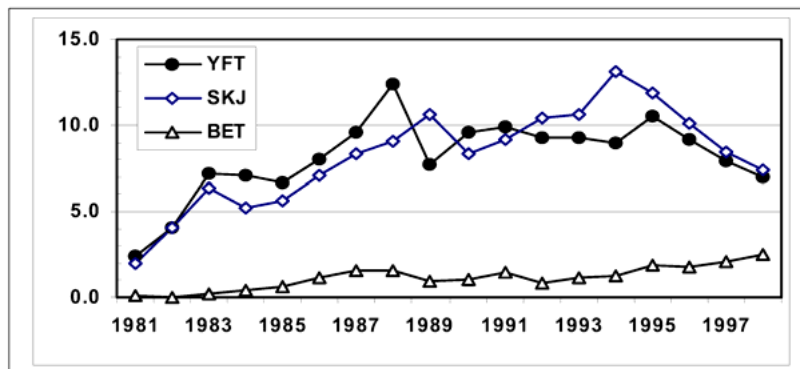
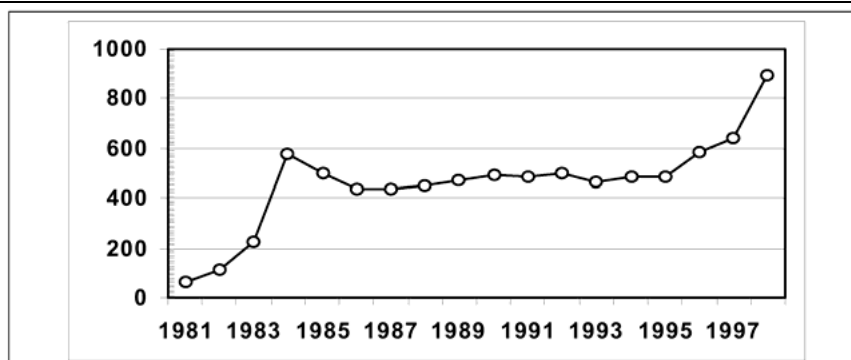


Table 5 – Number of explored CWP square by year of the European and associated purse seine fishery in the Indian Ocean, 1981-1998.

Year	Number of explored CWP
1981	66
1982	115
1983	223
1984	577
1985	499
1986	434
1987	434
1988	452
1989	475
1990	496
1991	486
1992	498
1993	462
1994	486
1995	484
1996	587
1997	641
1998	893



SAMPLING STATISTICS

Table 6 - Number of samples and fishes sampled from the European and associated purse seine fishery in the Indian Ocean, 1981-1998.

French Purse-Seiner Sampling	Year	Floating objects			Free school		
		YFT	SKJ	BET	YFT	SKJ	BET
Number of samples	1991	619	618	572	414	95	120
Number of fish sampled		25,140	140,117	11,913	35,577	23,780	2,913
Number of samples	1992	663	658	570	443	178	110
Number of fish sampled		41,638	168,708	10,530	30,256	38,250	1,099
Number of samples	1993	683	668	599	439	99	137
Number of fish sampled		39,220	164,783	10,499	37,797	25,372	3,279
Number of samples	1994	678	682	583	358	181	114
Number of fish sampled		45,728	160,208	13,508	37,618	38,424	1,808
Number of samples	1995	1,060	1,059	901	261	146	76
Number of fish sampled		84,317	273,617	30,363	35,715	31,323	3,696
Number of samples	1996	778	787	661	372	123	90
Number of fish sampled		98,589	237,639	39,408	50,264	27,424	3,969
Number of samples	1997	809	810	715	241	59	51
Number of fish sampled		151,695	294,055	64,393	43,288	21,734	2,952

Table 7 – Mean weight by species and fishing type (log, free and combined) of the European and associated purse seine fishery in the Indian Ocean, 1981-1998.

Year	YFT			SKJ			BET			ALB		
	Log	Free	All	Log	Free	All	Log	Free	All	Log	Free	All
1981												
1982	4.7	27.4	9.8									
1983	10.2	18.4	14.5	3.0	2.9	3.0						
1984	5.5	22.8	14.5	2.8	3.1	2.9	4.6	12.2	6.1			
1985	4.5	25.0	11.1	3.0	3.2	3.0	5.1	12.5	5.6			
1986	11.4	22.5	18.3	3.3	3.4	3.3	6.7	11.0	7.6			
1987	10.2	25.8	17.0	3.3	4.3	3.6	6.8	11.7	7.6			
1988	5.1	27.0	11.1	2.9	2.9	2.9	5.3	11.0	6.8			
1989	8.0	15.0	16.4	3.2	3.2	2.9	5.3	9.4	6.1			
1990	6.1	31.8	17.9	2.8	3.0	3.0	4.3	25.2	6.8			
1991	7.9	37.4	20.3	2.8	2.7	2.8	5.2	23.3	7.0		31.5	31.5
1992	9.9	34.6	19.2	3.0	3.0	3.0	5.3	13.3	5.9		30.1	30.1
1993	10.8	39.3	21.9	2.7	3.0	2.8	4.4	16.9	6.7		31.4	31.4
1994	6.9	40.9	16.0	2.5	3.4	2.7	4.7	31.1	6.1		30.3	30.3
1995	9.7	28.0	13.9	2.4	3.0	2.5	5.3	22.3	6.1	29.4	29.1	29.1
1996	5.4	28.8	9.5	2.4	3.2	2.5	4.8	11.0	5.3	28.3	30.3	30.2
1997	4.9	29.1	7.1	2.3	3.2	2.4	3.8	13.6	4.0	28.3	27.1	27.1
1998	5.1	23.4	7.9	2.5	2.7	2.5	4.4	10.7	5.0		27.2	27.2

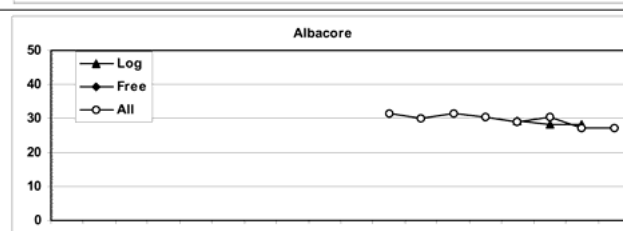
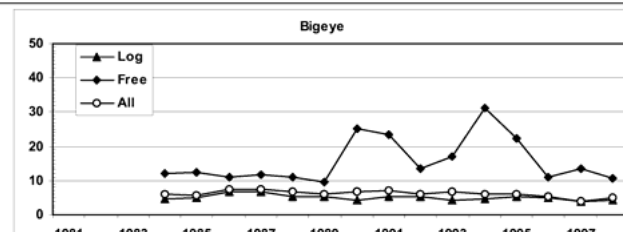
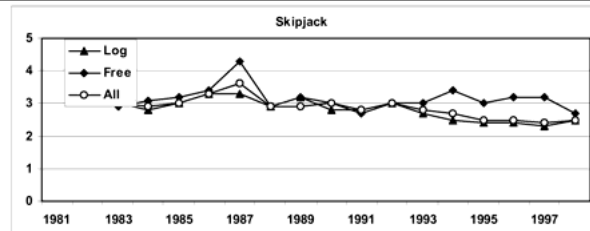
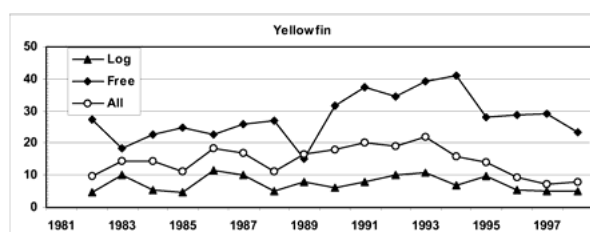


Table 8 – Annual sizes frequencies of the European and associated purse seine fishery catch : yellowfin on log schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
24	0	0	0	0	0	663	0	0
26	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
30	510	1697	761	1393	418	2879	9095	1190
32	928	10331	1836	4091	3384	10125	12684	1241
34	2893	15538	2802	3723	7439	26932	28864	10396
36	8834	28910	10653	8424	21320	102597	73555	70106
38	8682	26987	21052	15338	41461	176126	179980	110095
40	30072	47080	48205	65479	77002	240568	330110	167134
42	94008	71022	100204	181425	121908	330582	616306	277159
44	249685	113185	202135	443892	223155	581728	920218	389270
46	366626	249905	264111	580444	293795	985512	1995334	760391
48	268283	221267	192002	450005	314909	872121	1726056	811263
50	199805	142195	145280	318260	427612	743859	1398052	648213
52	187899	124768	137398	323667	629903	765558	1700960	871385
54	197666	122762	146588	331679	624305	863361	1413878	905240
56	195696	177597	167613	366370	505622	791852	1207377	978815
58	107311	201996	154719	256891	431717	548546	822856	682394
60	94974	205675	144534	235111	416807	623561	555601	505524
62	52711	157970	85476	136428	235674	569667	331085	366116
64	39092	101922	57174	81540	178480	404564	191992	253059
66	20808	65659	32667	40723	128912	199697	127842	259835
68	13630	30706	19155	21617	88520	64985	65515	170119
70	21052	21448	14753	12282	72981	22559	30123	108356
72	10995	16312	9314	5361	59124	14381	27307	67672
74	13617	12483	9292	2930	61795	10323	19914	58983
76	14895	10459	7376	3436	70014	9249	21272	23250
78	10233	7645	5531	4324	58977	13171	11309	11067
80	14723	7247	10475	4698	71678	6444	11356	19768
82	9082	7838	10360	6907	62465	5490	15709	6914
84	6552	8800	11850	4380	60099	2692	10011	7756
86	3399	10146	14825	3940	38369	3653	8249	7313
88	4376	12956	17138	5449	13696	4091	9251	15595
90	5283	13274	20533	8044	7444	3076	10460	24576
92	7311	18504	24799	10028	12428	5207	15679	30092
94	9582	23214	28239	10224	21094	6603	18554	40434
96	11615	28768	31591	14930	30040	9391	27737	60758
98	11402	32093	33807	17744	36022	15432	33549	71133
100	10626	35157	38500	19344	44443	24020	42343	68588
102	11429	39384	43779	26330	72141	36556	56764	75035
104	17875	51822	52388	41758	107056	43728	73787	73516
106	13816	42675	45395	40169	116839	43331	71975	68348
108	18819	39281	47315	39912	135853	43607	73753	51466
110	23044	41249	47664	40323	142232	39837	70670	41098
112	29689	41659	49598	42055	148043	44419	75808	36438
114	29937	37683	50207	39316	143281	46973	63211	34164
116	35633	39738	50194	33093	123844	52365	57536	19365
118	33178	35129	44310	27073	98166	51836	53175	14918
120	40379	34592	43018	23602	77459	52093	56384	6931
122	31945	31473	37257	21120	55011	41882	43286	5349
124	26245	24141	28858	16579	33627	33906	30703	3597
126	19231	18766	23997	15970	26103	27172	28457	4504
128	19836	19001	19801	17405	29143	27755	32037	6073
130	12873	15620	14451	13198	21373	20530	23145	4064
132	10223	12741	12470	11066	14458	15555	14481	2814
134	5774	9375	9394	10086	11195	11798	10825	2248
136	4141	6799	7066	9131	10788	8330	11579	2231
138	2800	5244	5101	8400	8571	6036	9301	2131

140	1477	4702	4035	7197	7146	5244	6835	3260
142	852	3928	3207	5991	4213	3902	4835	2418
144	527	3699	2186	5322	2862	3273	4353	1582
146	240	2644	1375	5299	2109	2710	2982	1276
148	252	1463	1353	4632	1133	2051	1835	1746
150	200	1088	1202	3355	667	1416	1528	1626
152	112	841	705	2327	471	928	1415	968
154	112	772	441	1898	436	872	1266	922
156	45	628	299	1772	342	466	677	347
158	11	430	295	1265	257	187	317	168
160	14	303	178	789	101	206	253	58
162	0	240	100	510	42	221	315	12
164	0	89	39	250	42	125	120	0
166	0	33	14	128	109	118	81	0
168	0	30	3	43	94	97	52	0
170	0	11	4	2	35	50	183	50
172	0	0	5	0	0	18	300	83
174	0	0	1	18	0	6	300	17
176	0	0	0	141	0	0	271	0
178	0	0	0	494	0	0	435	0
180	0	0	0	676	0	0	418	0
182	0	0	0	599	0	0	134	0
184	0	0	0	417	0	0	191	0
186	0	0	0	159	0	0	997	0
188	0	0	0	23	0	0	1590	0
190	0	0	0	0	0	0	643	0
192	0	0	0	0	0	0	68	0
194	0	0	0	0	0	0	0	0
196	0	0	0	0	0	0	0	0
198	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0
206	0	0	0	0	0	0	0	0
208	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0
216	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0
Number	2695557	2950790	2870449	4520406	6888253	9730862	14909450	9330026
Weight	21294	29220	30931	31308	66795	52280	72577	47886
Mean weight	7.9	9.9	10.8	6.9	9.7	5.4	4.9	5.1

Table 9 – Annual sizes frequencies of the European and associated purse seine fishery catch : yellowfin on free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
30	0	0	0	115	0	134	0	460
32	190	101	437	276	0	0	460	398
34	198	595	668	102	1086	31	911	399
36	983	866	1883	150	1631	1838	1619	1353
38	71	1237	7154	972	1455	2496	3626	5575
40	2429	920	11508	2141	14989	5516	4943	14644
42	8346	2761	7993	3919	11212	15707	9604	11427
44	21599	4760	18230	4919	22037	28541	7915	29034
46	32661	12833	34514	9910	31007	65203	30853	48182
48	29895	18880	24106	17881	23052	59770	60344	77975
50	14482	30020	13729	31413	47611	63759	87189	65077
52	15554	27261	12198	37719	63458	89180	87337	72749
54	11766	36039	10890	35572	55697	103850	41737	84637
56	10614	48768	16679	57698	40082	93472	29146	132664
58	7004	59073	13147	56633	41379	48790	29989	74426
60	6613	41817	10230	21062	33713	32074	21981	46732
62	3485	16775	4277	5937	25692	28300	31271	28282
64	2013	9109	3361	6552	27871	9988	10251	10677
66	2192	7311	2591	7082	32003	12784	7410	14997
68	287	6003	2253	4932	28047	13917	7695	4721
70	2600	9871	2417	1751	43062	13416	3952	6613
72	2653	9700	1951	2083	31391	9017	2921	7921
74	1187	15167	1375	450	39369	1122	4777	1594
76	1354	18635	852	576	34122	6245	4009	201
78	2670	13693	854	984	19857	4058	3750	23
80	2233	19083	2054	109	12033	3390	5613	1195
82	1212	19839	1866	88	5842	1195	3638	92
84	1017	18759	2370	312	4109	1283	2953	428
86	496	20529	2880	890	4984	1438	4980	813
88	231	25502	4436	791	5014	4373	6791	2631
90	613	21806	6344	956	4341	3970	9152	3255
92	1527	22735	9633	1541	8275	4487	14386	5723
94	1440	19079	10588	3249	13661	5915	16327	6076
96	3070	18846	16687	5601	20682	9505	18272	10719
98	3992	16180	19522	8280	27637	9861	15491	16616
100	6872	14169	22540	9604	33565	12755	17994	25972
102	17683	10624	28590	9831	37287	17144	22895	30456
104	35581	13163	44096	14941	42420	25604	28375	31121
106	38270	11063	41545	14901	48832	27656	24992	32024
108	57716	13144	43807	14620	47375	32481	26238	38885
110	66052	12603	46770	16613	43077	38224	25673	36049
112	84321	13556	50860	19447	43325	46285	31361	42868
114	70253	14124	46103	18919	41199	53991	24975	40463
116	67721	17747	46914	22586	39991	63458	21827	32332
118	66052	22256	42980	26909	43158	63835	23124	41496
120	100041	35341	49541	31225	51559	78531	30225	51008
122	95507	41500	53750	32332	47924	72056	31001	37110
124	109852	50787	61572	42447	48328	70771	31776	26049
126	100064	58730	65693	51306	62927	76146	37156	30183
128	130589	87795	76292	63876	89786	99218	59996	55202
130	112990	83030	79667	79637	83382	82324	54978	48365
132	120074	105828	82907	91737	77443	79326	54707	46243
134	91806	96940	80425	99161	70634	69263	53252	39406
136	93320	99025	84296	99889	66657	64335	56693	36553
138	73720	85164	83083	100998	61630	54872	51143	35880

140	58295	72304	77205	93769	52536	51007	47325	33522
142	43506	54130	66102	76826	39432	39552	38422	27229
144	34628	48343	59320	62643	27673	32834	32009	18623
146	23503	39030	47351	49567	21560	26113	24092	11817
148	15288	28688	36740	38898	17702	19223	16308	9970
150	11875	22170	30978	31001	12122	15757	11672	9110
152	7657	15892	24977	26184	8473	12228	9996	7024
154	5323	12711	20059	21916	6497	8784	8510	5202
156	3246	7699	15327	16183	4621	5444	5564	3836
158	2243	4487	12062	12475	3415	3801	4951	2884
160	1441	2630	7863	8636	1551	2291	3613	1661
162	907	1778	4987	5905	950	1616	2601	1306
164	468	1184	3064	4155	586	1337	1931	864
166	380	898	2029	2463	357	1225	1372	967
168	192	513	1386	1595	267	918	871	486
170	29	168	551	959	109	675	499	514
172	0	53	108	555	27	552	276	628
174	0	52	36	176	7	209	91	164
176	0	28	14	20	0	128	46	183
178	0	5	2	2	0	304	46	780
180	0	0	3	0	0	356	31	780
182	0	0	24	0	0	173	24	158
184	0	0	31	0	0	78	26	0
186	0	0	10	0	0	8	7	0
188	0	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0	0
192	0	0	0	0	0	0	0	0
194	0	0	0	0	0	0	0	0
196	0	0	0	0	0	0	0	0
198	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0
206	0	0	0	0	0	0	0	0
208	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0
216	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0
Number	1944139	1793904	1821332	1647551	2054783	2107515	1509957	1683677
Weight	72722	62028	71667	67315	57611	60720	43920	39359
Mean weight	37.4	34.6	39.3	40.9	28.0	28.8	29.1	23.4

Table 10 – Annual sizes frequencies of the European and associated purse seine fishery catch : yellowfin on both log and free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
24	0	0	0	0	0	663	0	0
26	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
30	510	1697	761	1508	418	3013	9095	1650
32	1118	10432	2273	4367	3384	10125	13144	1639
34	3090	16133	3470	3825	8526	26962	29775	10796
36	9817	29776	12537	8574	22951	104435	75174	71460
38	8752	28224	28206	16310	42916	178622	183607	115669
40	32501	48000	59713	67620	91991	246085	335053	181778
42	102354	73783	108197	185343	133120	346289	625910	288586
44	271284	117945	220364	448811	245191	610268	928133	418304
46	399287	262738	298624	590355	324802	1050715	2026187	808572
48	298178	240147	216108	467886	337960	931891	1786400	889238
50	214288	172215	159009	349673	475223	807618	1485241	713290
52	203452	152029	149597	361386	693361	854738	1788297	944135
54	209431	158801	157478	367250	680002	967211	1455615	989877
56	206310	226365	184292	424068	545703	885324	1236522	1111479
58	114315	261069	167866	313524	473095	597337	852845	756820
60	101586	247492	154764	256173	450520	655635	577582	552256
62	56197	174746	89753	142365	261366	597967	362356	394397
64	41105	111031	60535	88093	206351	414552	202242	263737
66	23000	72970	35258	47805	160915	212481	135251	274832
68	13917	36710	21408	26549	116567	78902	73211	174839
70	23651	31319	17170	14033	116043	35975	34075	114969
72	13648	26012	11265	7443	90515	23398	30228	75593
74	14804	27650	10666	3380	101164	11445	24691	60577
76	16248	29094	8228	4012	104136	15495	25280	23451
78	12903	21338	6386	5308	78834	17229	15059	11090
80	16956	26330	12529	4807	83711	9834	16969	20962
82	10295	27677	12226	6994	68306	6685	19347	7006
84	7569	27559	14220	4692	64209	3975	12965	8184
86	3895	30675	17705	4830	43353	5091	13228	8126
88	4607	38458	21574	6240	18710	8464	16042	18226
90	5896	35080	26876	9000	11785	7046	19611	27831
92	8838	41239	34431	11568	20703	9694	30065	35815
94	11021	42293	38827	13473	34755	12518	34880	46510
96	14685	47614	48278	20531	50722	18896	46009	71477
98	15394	48273	53329	26024	63659	25293	49040	87749
100	17498	49327	61040	28948	78008	36775	60337	94560
102	29112	50007	72369	36162	109427	53700	79658	105491
104	53456	64985	96484	56699	149476	69332	102163	104637
106	52086	53738	86940	55071	165671	70986	96967	100373
108	76535	52425	91122	54531	183228	76088	99991	90351
110	89096	53852	94434	56936	185310	78061	96343	77147
112	114011	55215	100457	61501	191368	90704	107169	79305
114	100190	51807	96310	58236	184480	100965	88187	74627
116	103353	57485	97108	55679	163835	115823	79363	51697
118	99230	57386	87290	53981	141324	115670	76299	56415
120	140420	69933	92559	54827	129018	130624	86609	57938
122	127452	72973	91007	53452	102935	113938	74288	42460
124	136097	74927	90430	59026	81955	104676	62479	29646
126	119295	77497	89691	67275	89030	103318	65613	34687
128	150424	106795	96094	81280	118929	126973	92033	61275
130	125863	98650	94117	92834	104756	102853	78123	52429
132	130297	118568	95377	102802	91901	94881	69189	49057
134	97579	106316	89819	109247	81830	81061	64077	41654
136	97461	105824	91362	109019	77446	72665	68272	38784

138	76520	90408	88184	109398	70201	60908	60445	38011
140	59772	77006	81241	100965	59682	56251	54160	36782
142	44357	58058	69309	82817	43645	43454	43257	29647
144	35155	52043	61506	67964	30536	36108	36361	20205
146	23743	41674	48726	54866	23669	28823	27075	13092
148	15540	30151	38093	43530	18835	21274	18143	11716
150	12075	23258	32180	34356	12790	17173	13201	10736
152	7768	16733	25681	28511	8944	13156	11411	7992
154	5435	13483	20500	23814	6933	9655	9776	6123
156	3290	8327	15626	17955	4963	5909	6241	4183
158	2254	4917	12357	13739	3672	3988	5268	3052
160	1455	2933	8040	9425	1652	2497	3866	1719
162	907	2018	5087	6415	992	1838	2915	1317
164	468	1273	3103	4404	628	1462	2051	864
166	380	930	2043	2591	466	1344	1454	967
168	192	543	1389	1638	361	1015	922	486
170	29	180	555	961	143	725	682	564
172	0	53	113	555	27	570	576	711
174	0	52	36	194	7	215	391	180
176	0	28	14	162	0	128	317	183
178	0	5	2	496	0	304	481	780
180	0	0	3	676	0	356	449	780
182	0	0	24	599	0	173	158	158
184	0	0	31	417	0	78	217	0
186	0	0	10	159	0	8	1004	0
188	0	0	0	23	0	0	1590	0
190	0	0	0	0	0	0	643	0
192	0	0	0	0	0	0	68	0
194	0	0	0	0	0	0	0	0
196	0	0	0	0	0	0	0	0
198	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0
206	0	0	0	0	0	0	0	0
208	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0
216	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0
Number	4639697	4744695	4691780	6167958	8943036	11838370	16419410	11013700
Weight	94017	91247	102597	98623	124405	113000	116497	87245
Mean weight	20.3	19.2	21.9	16.0	13.9	9.5	7.1	7.9

Table 11 – Annual sizes frequencies of the European and associated purse seine fishery catch : skipjack on log schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	420	207	2444	8852	1230	8182	78240	0
31	1550	5478	1184	1865	7738	64539	92764	3212
32	1735	16091	18175	34589	11917	52447	53976	6788
33	4199	27650	14349	84826	17839	75984	94943	17738
34	5343	63768	24575	50247	40387	134079	195564	54652
35	8429	65416	42562	57717	32874	129337	151232	38248
36	26458	155748	45345	54480	110312	255259	152470	210992
37	40042	124559	57804	77157	132906	396021	264630	298846
38	63007	141154	137723	76367	225824	444144	281765	430818
39	102333	114840	160111	104955	291332	589507	442111	446409
40	282261	179578	396755	429058	829539	1266039	1198259	1157264
41	442792	217087	512201	726847	1114730	1413604	973227	1076346
42	668156	280603	1161804	1355603	1866175	2285244	2300571	1843708
43	988302	539037	1497610	1989664	2227596	2389406	2772076	1376553
44	1559405	731711	2314842	3586899	3897422	3972508	3711391	3075805
45	1766889	944107	2510346	3800533	3740107	3611289	3437078	1724677
46	2542140	1608599	2965739	5514949	6208576	4594949	6060623	4526079
47	2873643	2010116	2864274	4855650	4992710	3863713	4990676	4557039
48	2634403	2297027	2673930	4563236	4628452	2933805	4218332	3770062
49	1962574	2352088	2209040	3342698	3715675	1968933	3579591	4058562
50	2468801	3033075	1965067	2320548	2805745	1239661	2030554	2793878
51	1839160	2128471	1424644	1294961	2237041	1024390	1493677	2581668
52	1556114	1936761	1324553	1128084	1657614	938432	1386890	2157989
53	1472311	1483157	1172806	843154	1277096	872003	955463	987613
54	1295900	1181731	1072503	696411	1056197	699255	910353	1382126
55	650512	748486	899406	525444	638656	672193	540906	579369
56	519189	786578	750942	492210	710860	600052	798749	1320319
57	501308	681066	672845	399189	399417	496438	394712	481026
58	417536	596615	634901	365262	348276	402920	402586	445473
59	266461	416734	427559	408914	320387	347911	259598	286610
60	400105	611258	516208	563873	356133	377630	314476	274218
61	337971	518611	514251	423679	331506	435467	245737	267607
62	270922	517467	416054	478850	144122	290316	295381	233119
63	204906	384148	367276	361606	135177	255350	109302	176058
64	205770	311450	262204	371078	154661	289764	154711	189921
65	175400	161484	176060	168317	68720	119673	74591	80615
66	118239	128921	141314	182972	102769	135926	66452	75999
67	95844	82671	86151	62837	35474	68166	34859	68762
68	56811	36014	51516	56850	23670	51804	34904	51266
69	22312	30372	35289	41342	15021	27492	6842	17144
70	20849	22762	26753	23104	14954	24674	4875	12637
71	24003	14616	6418	19495	10196	6530	948	3855
72	14253	3031	7074	4984	4824	12122	485	4757
73	5565	2671	3924	792	2972	1741	254	2050
74	513	638	2212	122	2591	2477	485	0
75	472	1389	412	3389	1099	119	0	0
76	655	683	536	3430	581	1030	0	0
77	0	596	151	0	1198	0	62	3253
78	0	0	1485	0	0	0	0	0
79	0	44	0	448	782	0	32	0

80	0	364	0	0	0	0	262	0
81	5413	239	0	0	741	0	0	0
82	0	0	0	0	0	0	0	0
83	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
86	0	247	0	0	0	0	230	0
87	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0
99	0	0	0	0	0	1208	0	0
100	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0
Number	8921380	27697210	32571320	41957540	46951820	39843730	45567890	43151130
Weight	79962	83378	89098	105874	112901	93846	105829	107580
Mean weight	2.8	3.0	2.7	2.5	2.4	2.4	2.3	2.5

Table 12 – Annual sizes frequencies of the European and associated purse seine fishery catch : skipjack on free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	0	0	1018	0	0	155	0	8705
31	0	0	0	0	0	1567	0	762
32	0	1644	0	185	588	3266	4853	9142
33	0	4682	7971	100	0	3465	72	12337
34	473	5037	5863	1077	167	2237	3998	8053
35	473	9945	4504	1077	3809	5497	13415	4858
36	947	8073	9132	768	530	8092	10189	10248
37	5704	6492	2589	4205	3576	4692	28461	13256
38	3191	7709	16926	2905	3987	17311	43439	6120
39	796	9810	27930	14760	6384	31841	24068	36317
40	9248	18371	56815	58426	27170	101531	54422	60091
41	24878	31198	70474	98738	63173	136782	35214	78244
42	69435	56652	122682	249189	119078	273828	131272	159890
43	120800	75272	204083	295217	203109	440676	156793	193210
44	138670	108143	315428	569576	463423	580686	305174	412036
45	184154	137819	492886	735989	453604	666821	386038	451107
46	342629	267120	667278	1124057	850535	1010831	852603	697171
47	560909	404308	747697	1173873	813133	859960	502851	1124874
48	550780	633259	703252	1201476	887299	662605	445844	1026892
49	400791	654692	663423	914001	898201	558261	443824	974708
50	523566	792483	663114	811640	866134	440654	276655	522276
51	366738	542985	508262	449315	652763	347109	154452	342854
52	320021	547517	656238	315895	525863	328592	87500	361670
53	205429	514097	607907	178249	399593	283463	99710	318320
54	156240	451874	582419	186591	302219	248110	97520	267826
55	115515	292664	506845	128878	178410	176864	46441	117067
56	90836	195025	409258	125459	217128	200984	77363	92740
57	57636	126888	294291	157597	98927	197900	56713	79961
58	28406	105320	186725	147665	112244	122912	52695	58973
59	25451	42597	149804	138464	113216	129697	65569	46087
60	17677	56067	164266	160477	111399	161197	72443	70630
61	18297	48301	106844	149724	92847	181229	152404	33991
62	11110	56927	94915	183671	82111	127228	193131	35255
63	11379	51165	68821	206527	104029	114177	194969	14544
64	8599	44590	70357	263155	129324	119040	151663	38686
65	7033	26810	40227	233654	128028	100057	152685	26731
66	5451	13125	30783	207655	144572	82930	115330	63658
67	1881	10073	14354	193268	81265	74811	73915	32685
68	3323	6939	20475	192396	58523	69686	67066	37669
69	17062	6326	20803	170120	28231	77186	22749	14853
70	0	3932	17524	188333	12899	105453	13845	4729
71	5596	2051	7460	104702	10815	112123	14050	6543
72	4224	2303	13378	99537	6714	120724	6178	16048
73	0	3085	5397	48936	484	106717	5978	18902
74	0	2702	3022	11404	2527	43344	5937	4729
75	1940	5924	761	8416	10083	13241	0	0
76	0	4020	329	1612	544	9464	0	2688
77	0	63	377	421	151	2818	138	0
78	0	1072	632	223	0	550	0	0
79	0	63	0	760	0	0	0	0

80	0	63	483	274	0	0	0	0
81	0	0	0	55	0	0	0	0
82	0	0	0	0	0	0	0	0
83	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
86	0	0	0	0	0	1306	0	0
87	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0
Number	4417289	6397278	9366020	11510690	9268810	9469668	5699627	7918134
Weight	11867	19147	28190	38689	27711	30564	18048	21083
Mean weight	2.7	3.0	3.0	3.4	3.0	3.2	3.2	2.7

Table 13 – Annual sizes frequencies of the European and associated purse seine fishery catch : skipjack on both log and free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0
30	420	207	3462	8852	1230	8337	78240	8705
31	1550	5478	1184	1865	7738	66106	92764	3974
32	1735	17735	18175	34775	12506	55712	58829	15931
33	4199	32333	22320	84926	17839	79450	95014	30075

34	5816	68805	30438	51323	40553	136315	199562	62705
35	8902	75362	47066	58794	36683	134834	164647	43106
36	27404	163821	54477	55249	110842	263351	162658	221240
37	45746	131052	60393	81362	136481	400712	293091	312102
38	66198	148863	154649	79272	229810	461455	325204	436939
39	103129	124650	188041	119714	297716	621348	466179	482725
40	291510	197948	453570	487484	856709	1367571	1252681	1217356
41	467670	248286	582675	825585	1177903	1550386	1008441	1154590
42	737591	337254	1284486	1604792	1985253	2559072	2431842	2003598
43	1109102	614309	1701693	2284881	2430705	2830082	2928868	1569763
44	1698075	839853	2630269	4156475	4360846	4553194	4016565	3487841
45	1951042	1081925	3003232	4536522	4193710	4278110	3823116	2175783
46	2884769	1875719	3633016	6639006	7059111	5605781	6913225	5223249
47	3434552	2414423	3611971	6029523	5805843	4723674	5493527	5681914
48	3185184	2930286	3377182	5764712	5515750	3596410	4664177	4796954
49	2363365	3006780	2872462	4256699	4613876	2527194	4023414	5033270
50	2992366	3825558	2628181	3132188	3671879	1680315	2307209	3316154
51	2205898	2671456	1932906	1744275	2889804	1371499	1648129	2924521
52	1876136	2484277	1980791	1443979	2183477	1267024	1474390	2519659
53	1677739	1997254	1780714	1021404	1676689	1155465	1055173	1305932
54	1452140	1633605	1654922	883001	1358416	947365	1007873	1649952
55	766026	1041150	1406251	654322	817066	849056	587347	696436
56	610025	981603	1160199	617669	927989	801036	876112	1413059
57	558944	807954	967135	556786	498344	694338	451424	560987
58	445942	701935	821626	512928	460519	525832	455281	504445
59	291912	459331	577363	547378	433604	477608	325166	332696
60	417783	667325	680473	724350	467532	538827	386918	344848
61	356268	566912	621095	573403	424353	616695	398141	301599
62	282032	574395	510969	662521	226234	417544	488512	268373
63	216286	435314	436097	568133	239206	369527	304271	190601
64	214368	356040	332560	634233	283984	408804	306374	228607
65	182433	188294	216287	401972	196749	219730	227276	107346
66	123690	142046	172097	390628	247341	218857	181782	139658
67	97726	92744	100506	256105	116739	142976	108774	101447
68	60134	42953	71992	249246	82193	121490	101970	88935
69	39374	36698	56091	211462	43252	104678	29591	31997
70	20849	26693	44277	211437	27853	130127	18720	17366
71	29600	16666	13878	124197	21011	118653	14997	10398
72	18477	5334	20452	104520	11538	132846	6663	20804
73	5565	5757	9321	49728	3457	108458	6232	20952
74	513	3340	5234	11526	5118	45821	6422	4729
75	2412	7313	1173	11805	11182	13360	0	0
76	655	4703	865	5042	1125	10494	0	2688
77	0	659	528	421	1349	2818	200	3253
78	0	1072	2117	223	0	550	0	0
79	0	107	0	1208	782	0	32	0
80	0	427	483	274	0	0	262	0
81	5413	239	0	55	741	0	0	0
82	0	0	0	0	0	0	0	0
83	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0
86	0	247	0	0	0	1306	230	0
87	0	0	0	0	0	0	0	0
88	0	0	0	0	0	0	0	0
89	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0

96	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0
99	0	0	0	0	0	1208	0	0
100	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0
108	0	0	0	0	0	0	0	0
109	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0
111	0	0	0	0	0	0	0	0
112	0	0	0	0	0	0	0	0
113	0	0	0	0	0	0	0	0
114	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0
118	0	0	0	0	0	0	0	0
119	0	0	0	0	0	0	0	0
Number	3338670	34094500	41937340	53468230	56220620	49313400	51267520	51069260
Weight	91829	102525	117287	144563	140612	124410	123876	128663
Mean weight	2.8	3.0	2.8	2.7	2.5	2.5	2.4	2.5

Table 14 – Annual sizes frequencies of the European and associated purse seine fishery catch : bigeye on log schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
28	0	0	0	0	0	188	0	0
30	264	623	1207	529	0	1434	1521	275
32	261	1775	1210	2191	385	3291	7461	275
34	1589	8859	940	5128	1703	5313	15048	5493
36	1858	16508	6387	11128	8922	44127	30901	42639
38	5547	19575	25266	7649	15034	90502	49171	54623
40	23193	65356	45421	27344	47895	154392	154912	123141
42	52857	58506	70922	56510	83592	209300	335515	206260
44	111384	59581	111861	109676	140249	334013	566520	366686
46	218100	94530	178013	175139	212370	468750	1101056	558218
48	194084	85804	174839	219428	216814	437579	1012698	503560
50	132069	82600	143868	233211	224266	244696	628790	532426
52	102532	76780	110675	200727	249645	214324	678923	562037
54	97740	73533	95194	179895	371830	207871	620419	428815
56	99430	103435	101124	173029	388219	248292	597924	524983
58	87683	81063	91196	140678	292328	179491	451406	377971
60	94822	75139	69764	109965	255428	157126	313964	233174
62	76435	54881	48460	76589	143913	112402	214808	199982
64	63740	51561	36992	55684	143429	87508	178136	117883
66	32861	41591	25495	44965	116253	87796	156626	111657
68	24208	34183	14476	34599	88533	60250	84098	74604
70	40520	27160	16658	39337	88693	51086	59541	80437
72	24153	22306	11349	33266	66837	34184	46252	33531
74	17908	17762	13233	28843	65842	32521	46274	25268
76	12017	13939	10610	36141	48356	26614	43219	25146
78	11770	13040	6075	23874	33540	23429	24097	18197
80	13798	14060	6776	21514	44657	23235	28594	18982

82	9959	10865	6375	15264	36866	15366	25385	15308
84	10437	11292	5960	8992	28438	12649	14117	11025
86	10916	10861	6393	3933	25131	11711	14087	13307
88	10747	9542	6343	3825	14687	13334	8528	12901
90	11005	7573	6347	3340	12020	9574	6926	11972
92	9955	7074	6324	4281	13123	11433	7087	14922
94	9769	6812	6082	5098	13760	13206	6603	17455
96	9177	6383	5546	5496	13103	13967	5782	18512
98	8910	5827	4702	5262	11315	13960	5144	18477
100	8251	4952	4054	5022	9105	13318	4964	18152
102	8003	3942	3183	4305	7251	12180	4999	17522
104	6978	3281	2493	3998	5846	11682	5038	16732
106	5665	2466	1872	3845	4613	10882	4444	14315
108	4057	1888	1401	3484	3815	10277	3733	11779
110	3020	1393	1014	3142	2781	9326	2786	8793
112	2310	915	705	2598	2218	8185	2022	6083
114	1743	639	468	1947	1689	7068	1389	3750
116	1279	486	345	1271	1358	5877	1006	2364
118	893	297	395	708	1117	4756	780	1387
120	724	217	404	405	895	3777	627	983
122	595	164	351	190	701	3111	592	775
124	563	184	345	78	528	2610	590	587
126	467	219	292	31	420	2258	569	504
128	590	246	307	31	344	2014	560	491
130	463	193	282	31	326	1704	538	303
132	346	231	277	31	314	1538	530	233
134	248	160	248	15	334	1281	462	115
136	13	173	280	0	302	1037	394	115
138	13	173	290	0	308	846	326	57
140	0	166	287	0	248	677	286	0
142	0	157	282	0	213	539	244	0
144	0	154	247	0	227	415	201	0
146	0	150	209	0	194	295	184	0
148	0	148	164	0	184	225	134	0
150	0	104	132	0	186	154	100	0
152	0	102	24	0	179	118	67	0
154	0	66	8	0	150	104	17	0
156	0	31	8	0	136	76	0	0
158	0	20	0	0	112	55	0	0
160	0	10	0	0	39	51	0	0
162	0	10	0	0	27	21	0	0
164	0	0	0	0	25	21	0	0
166	0	0	0	0	12	25	0	0
168	0	0	0	0	0	21	0	0
170	0	0	0	0	0	25	0	0
172	0	0	0	0	0	29	0	0
174	0	0	0	0	0	29	0	0
176	0	0	0	0	0	25	0	0
178	0	0	0	0	0	17	0	0
180	0	0	0	0	0	17	0	0
182	0	0	0	0	0	8	0	0
184	0	0	0	0	0	0	0	0
186	0	0	0	0	0	0	0	0
188	0	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0	0
192	0	0	0	0	0	0	0	0
194	0	0	0	0	0	0	0	0
196	0	0	0	0	0	0	0	0
198	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0

206	0	0	0	0	0	0	0	0
208	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0
216	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0
Number	1677919	1293714	1492451	2133663	3563372	3771586	7579113	5465184
Weight	8807	6803	6544	10038	18932	18044	28572	24077
Mean weight	5.2	5.3	4.4	4.7	5.3	4.8	3.8	4.4

Table 15 – Annual sizes frequencies of the European and associated purse seine fishery catch : bigeye on free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0
32	0	24	204	13	0	0	215	0
34	47	127	42	13	0	0	45	284
36	47	28	84	0	0	613	88	753
38	194	238	439	40	238	2948	1290	1511
40	1580	355	879	38	238	3679	2803	2194
42	4022	785	13059	140	238	14201	3333	7772
44	6442	2578	25568	1153	3132	20626	3452	19743
46	8852	5497	42496	2701	4768	29850	10615	26571
48	15062	5089	36831	3207	5106	24166	7881	42287
50	5890	4244	15761	9861	5555	19170	17274	20341
52	6840	4035	1448	8839	3692	17138	11307	42511
54	5438	5429	12101	5995	6236	14753	18777	61895
56	4412	9151	4110	6794	9026	29204	21196	67867
58	3287	14560	14401	5363	6280	13420	4378	57682
60	6366	11835	9194	1438	5272	16319	9561	38113
62	2450	8437	8947	663	2608	8708	3880	18617
64	1614	3034	14311	367	3533	3882	874	13112
66	757	1495	3114	430	2161	6798	1007	10555
68	1935	1468	444	301	2555	5122	63	3995
70	3976	2930	2823	687	5454	9365	484	9401
72	1748	1681	208	288	6846	4847	848	6624
74	660	1475	3031	345	6370	2661	357	1904
76	646	924	237	373	4437	4425	0	1461
78	336	671	302	118	1244	4049	476	1218
80	865	628	363	153	672	11339	0	1678
82	716	183	432	288	348	4278	250	3084
84	853	459	555	178	807	2160	0	2047
86	1073	216	595	221	965	2381	0	2528
88	1094	366	723	285	1640	2700	1	3343
90	1175	283	894	329	2322	2908	25	4486
92	1202	385	1110	370	2777	2996	54	5250
94	1327	584	1388	404	2934	3022	91	5844
96	1303	630	1602	396	2781	2781	117	5865
98	1335	680	1971	479	2432	2726	157	5725
100	1351	569	2371	560	2132	2549	175	5546
102	1430	457	2777	675	1825	2437	202	5377
104	1687	373	3197	774	1751	2467	238	5180
106	2139	275	3588	898	1703	2330	249	4540
108	2733	263	4087	1081	1684	2283	278	4143
110	3360	279	4420	1231	1627	2218	364	3775
112	3936	323	4823	1465	1636	2290	502	3708
114	4424	428	5272	1903	1614	2531	771	3731

116	4962	551	5708	2175	1576	2742	1123	3777
118	5333	676	5929	2523	1723	2839	1493	3829
120	5718	884	6152	2637	1887	2874	1830	3849
122	6151	1066	6302	2840	2078	2812	2137	3886
124	6384	1285	6334	2837	2504	2767	2398	3905
126	6364	1490	6261	2946	2814	2595	2578	3849
128	6106	1627	6115	3091	3135	2435	2643	3644
130	5367	1612	5748	2955	3272	2173	2511	3280
132	4915	1593	5620	2837	3374	1999	2401	3024
134	4043	1495	5284	2712	3371	1767	2191	2768
136	3303	1293	4754	2670	3170	1565	1980	2544
138	2687	1067	4043	2830	2918	1410	1747	2394
140	1971	846	3247	2921	2522	1256	1499	2125
142	1534	707	2559	3018	2174	1114	1279	1861
144	1160	561	1989	3143	1939	1005	1067	1626
146	894	483	1528	3091	1708	885	845	1465
148	610	413	1174	2908	1434	701	611	1199
150	415	310	881	2555	1219	529	415	1030
152	252	208	569	1979	952	375	256	896
154	190	153	378	1591	763	285	168	799
156	103	97	237	1020	583	182	128	669
158	79	63	141	758	465	143	107	573
160	55	52	60	510	315	112	84	442
162	56	30	27	360	198	104	69	337
164	22	26	22	217	145	105	52	224
166	22	23	16	108	76	90	36	158
168	22	16	0	48	34	68	23	103
170	11	10	0	20	9	61	12	64
172	11	6	0	19	4	61	9	51
174	0	3	0	9	2	46	9	26
176	0	0	0	9	0	38	8	26
178	0	0	0	0	0	23	0	0
180	0	0	0	0	0	15	0	0
182	0	0	0	0	0	7	0	0
184	0	0	0	0	0	0	0	0
186	0	0	0	0	0	0	0	0
188	0	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0	0
192	0	0	0	0	0	0	0	0
194	0	0	0	0	0	0	0	0
196	0	0	0	0	0	0	0	0
198	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0
206	0	0	0	0	0	0	0	0
208	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0
216	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0
Number	183341	112114	331280	118192	163006	347523	155385	586680
Weight	4274	1497	5612	3679	3630	3819	2112	6252
Mean weight	23.3	13.3	16.9	31.1	22.3	11	13.6	10.7

Table 16 – Annual sizes frequencies of the European and associated purse seine fishery catch : bigeye on both log and free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
20	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0
28	0	0	0	0	0	188	0	0
30	264	623	1207	529	0	1434	1521	275
32	261	1799	1414	2205	385	3291	7676	275
34	1637	8986	982	5142	1703	5313	15094	5777
36	1906	16536	6471	11128	8922	44740	30989	43392
38	5741	19813	25705	7689	15272	93450	50461	56134
40	24773	65711	46300	27382	48133	158071	157715	125335
42	56879	59291	83982	56650	83830	223501	338848	214031
44	117826	62159	137429	110828	143381	354639	569972	386429
46	226952	100027	220509	177840	217138	498600	1111671	584789
48	209147	90892	211669	222635	221921	461744	1020578	545848
50	137959	86844	159629	243072	229820	263866	646064	552766
52	109372	80815	112123	209566	253337	231461	690230	604548
54	103177	78962	107294	185890	378066	222624	639196	490710
56	103843	112586	105234	179824	397245	277496	619120	592850
58	90970	95622	105597	146041	298608	192911	455784	435652
60	101188	86974	78958	111403	260700	173446	323525	271287
62	78885	63318	57407	77252	146521	121110	218687	218599
64	65355	54595	51303	56052	146962	91390	179010	130995
66	33618	43086	28609	45395	118414	94594	157633	122211
68	26143	35651	14920	34901	91088	65372	84161	78600
70	44496	30090	19481	40024	94147	60451	60025	89838
72	25901	23987	11557	33554	73682	39031	47100	40155
74	18568	19236	16264	29188	72211	35183	46631	27172
76	12663	14863	10847	36514	52793	31038	43219	26607
78	12106	13711	6376	23993	34783	27478	24574	19415
80	14663	14688	7139	21666	45330	34574	28594	20660
82	10674	11049	6808	15552	37214	19643	25636	18392
84	11290	11751	6514	9170	29245	14808	14117	13072
86	11989	11077	6988	4154	26096	14092	14087	15834
88	11841	9908	7066	4110	16328	16034	8529	16243
90	12180	7856	7242	3669	14342	12483	6951	16458
92	11158	7459	7434	4651	15900	14429	7141	20172
94	11095	7396	7470	5501	16693	16228	6693	23298
96	10480	7013	7148	5892	15885	16748	5899	24377
98	10244	6506	6673	5740	13747	16686	5301	24203
100	9601	5520	6426	5581	11237	15867	5139	23697
102	9433	4399	5961	4981	9075	14616	5200	22899
104	8665	3653	5689	4772	7597	14150	5276	21912
106	7805	2741	5460	4742	6316	13211	4693	18855
108	6790	2151	5489	4565	5499	12560	4010	15922
110	6380	1672	5433	4373	4407	11544	3150	12568
112	6246	1237	5528	4063	3854	10475	2524	9791
114	6166	1067	5740	3850	3303	9598	2160	7480
116	6241	1037	6053	3446	2934	8619	2129	6142
118	6226	973	6325	3232	2840	7595	2273	5216
120	6441	1101	6556	3042	2781	6650	2457	4832
122	6746	1230	6653	3030	2779	5924	2729	4661
124	6947	1470	6679	2915	3032	5377	2988	4492
126	6831	1709	6553	2977	3233	4853	3146	4353
128	6696	1873	6422	3123	3479	4449	3202	4135
130	5829	1804	6030	2986	3599	3877	3049	3584
132	5262	1824	5897	2868	3687	3537	2931	3257
134	4291	1655	5532	2728	3705	3048	2653	2883
136	3316	1467	5034	2670	3472	2602	2375	2659

138	2700	1240	4333	2830	3226	2256	2072	2451
140	1971	1013	3534	2921	2770	1934	1785	2125
142	1534	864	2840	3018	2387	1653	1523	1861
144	1160	715	2236	3143	2166	1421	1268	1626
146	894	633	1738	3091	1902	1180	1029	1465
148	610	560	1338	2908	1619	926	745	1199
150	415	415	1013	2555	1406	683	515	1030
152	252	310	593	1979	1131	493	323	896
154	190	219	386	1591	913	389	185	799
156	103	127	245	1020	719	259	128	669
158	79	83	141	758	578	198	107	573
160	55	62	60	510	354	163	84	442
162	56	40	27	360	226	126	69	337
164	22	26	22	217	170	126	52	224
166	22	23	16	108	88	115	36	158
168	22	16	0	48	34	89	23	103
170	11	10	0	20	9	86	12	64
172	11	6	0	19	4	90	9	51
174	0	3	0	9	2	75	9	26
176	0	0	0	9	0	63	8	26
178	0	0	0	0	0	39	0	0
180	0	0	0	0	0	32	0	0
182	0	0	0	0	0	15	0	0
184	0	0	0	0	0	0	0	0
186	0	0	0	0	0	0	0	0
188	0	0	0	0	0	0	0	0
190	0	0	0	0	0	0	0	0
192	0	0	0	0	0	0	0	0
194	0	0	0	0	0	0	0	0
196	0	0	0	0	0	0	0	0
198	0	0	0	0	0	0	0	0
200	0	0	0	0	0	0	0	0
202	0	0	0	0	0	0	0	0
204	0	0	0	0	0	0	0	0
206	0	0	0	0	0	0	0	0
208	0	0	0	0	0	0	0	0
210	0	0	0	0	0	0	0	0
212	0	0	0	0	0	0	0	0
214	0	0	0	0	0	0	0	0
216	0	0	0	0	0	0	0	0
218	0	0	0	0	0	0	0	0
Number	1861260	1405828	1823732	2251855	3726379	4119109	7734498	6051864
Weight	13081	8300	12156	13718	22561	21863	30683	30330
Mean weight	7.0	5.9	6.7	6.1	6.1	5.3	4.0	5.0

Table 17 – Annual sizes frequencies of the European and associated purse seine fishery catch : albacore on log schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
70	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	0
74	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0
82	0	0	0	0	0	0	0	0
84	0	0	0	0	0	0	0	0
86	0	0	0	0	0	22	9	0
88	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0
92	0	0	0	0	0	44	18	0
94	0	0	0	0	0	44	18	0
96	0	0	0	0	46	93	39	0
98	0	0	0	0	87	187	77	0
100	0	0	0	0	165	313	126	0
102	0	0	0	0	194	463	181	0
104	0	0	0	0	213	606	244	0
106	0	0	0	0	314	693	281	0
108	0	0	0	0	228	300	121	0
110	0	0	0	0	223	210	86	0
112	0	0	0	0	199	224	93	0
114	0	0	0	0	49	98	39	0
116	0	0	0	0	30	45	19	0
118	0	0	0	0	33	22	9	0
120	0	0	0	0	11	3	1	0
122	0	0	0	0	0	25	10	0
124	0	0	0	0	0	33	14	0
126	0	0	0	0	0	5	2	0
128	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0
132	0	0	0	0	0	0	0	0
134	0	0	0	0	0	0	0	0
136	0	0	0	0	0	0	0	0
138	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0
Number	0	0	0	0	1792	3430	1387	0
Weight	0	0	0	0	53	97	39	0
Mean weight	0	0	0	0	29.4	28.3	28.3	0

Table 18 – Annual sizes frequencies of the European and associated purse seine fishery catch : albacore on free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
70	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	54
74	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0
80	0	21	23	0	0	0	0	0
82	0	72	82	0	0	21	0	0
84	0	0	71	26	0	0	0	0
86	0	52	67	13	18	118	308	126
88	0	96	67	52	104	104	568	270
90	0	129	164	83	238	119	455	590
92	44	491	168	329	551	301	1215	1003
94	223	488	305	755	1061	826	2499	1012
96	245	1761	659	1625	1275	940	4444	2571
98	1275	3733	1805	3287	1803	1910	6156	3867
100	2710	7422	2468	6123	3866	2972	9551	3757
102	4108	9594	2366	6060	4890	4793	6961	7066
104	6172	12782	3159	9397	4587	5258	7095	4778
106	10770	16216	4901	9625	4924	6443	7404	7553
108	11917	15572	4685	12034	4704	6286	5815	4573
110	9806	13474	4763	11524	5028	5363	4536	4633
112	10608	10085	4808	8750	2785	4745	3227	2776
114	5873	7455	4131	5249	2642	2268	2796	434
116	2983	5618	2566	4196	1133	1265	1395	270
118	1646	2351	1711	1883	1140	1884	542	70
120	600	18	1393	552	484	436	156	10
122	534	41	282	233	3	382	30	26
124	0	51	45	59	16	162	22	0
126	0	0	9	0	0	88	25	10
128	0	0	0	0	2	184	0	25
130	0	0	0	0	0	93	18	87
132	0	0	0	0	0	67	21	0
134	0	0	0	0	0	59	0	0
136	0	0	0	0	0	59	0	0
138	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0
Number	69514	107522	40697	81856	41253	47142	65238	45561
Weight	2189	3242	1279	2483	1202	1429	1765	1239
Mean weight	31.5	30.1	31.4	30.3	29.1	30.3	27.1	27.2

Table 19 – Annual sizes frequencies of the European and associated purse seine fishery catch : albacore on both log and free schools, 1991-1998.

Size class	1991	1992	1993	1994	1995	1996	1997	1998
70	0	0	0	0	0	0	0	0
72	0	0	0	0	0	0	0	54
74	0	0	0	0	0	0	0	0
76	0	0	0	0	0	0	0	0
78	0	0	0	0	0	0	0	0
80	0	21	23	0	0	0	0	0
82	0	72	82	0	0	21	0	0
84	0	0	71	26	0	0	0	0
86	0	52	67	13	18	140	318	126
88	0	96	67	52	104	104	568	270
90	0	129	164	83	238	119	455	590
92	44	491	168	329	551	345	1233	1003
94	223	488	305	755	1061	870	2517	1012
96	245	1761	659	1625	1321	1032	4483	2571
98	1275	3733	1805	3287	1890	2096	6232	3867
100	2710	7422	2468	6123	4031	3285	9677	3757
102	4108	9594	2366	6060	5084	5256	7142	7066
104	6172	12782	3159	9397	4800	5863	7339	4778
106	10770	16216	4901	9625	5238	7135	7685	7553
108	11917	15572	4685	12034	4932	6586	5936	4573
110	9806	13474	4763	11524	5251	5572	4621	4633
112	10608	10085	4808	8750	2984	4969	3320	2776
114	5873	7455	4131	5249	2691	2366	2835	434
116	2983	5618	2566	4196	1163	1311	1414	270
118	1646	2351	1711	1883	1173	1906	552	70
120	600	18	1393	552	494	439	158	10
122	534	41	282	233	3	407	40	26
124	0	51	45	59	16	195	36	0
126	0	0	9	0	0	94	27	10
128	0	0	0	0	2	184	0	25
130	0	0	0	0	0	93	18	87
132	0	0	0	0	0	67	21	0
134	0	0	0	0	0	59	0	0
136	0	0	0	0	0	59	0	0
138	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0
Number	69514	107522	40697	81856	43045	50573	66625	45561
Weight	2189	3242	1279	2483	1255	1526	1805	1239
Mean weight	31.5	30.1	31.4	30.3	29.1	30.2	27.1	27.2

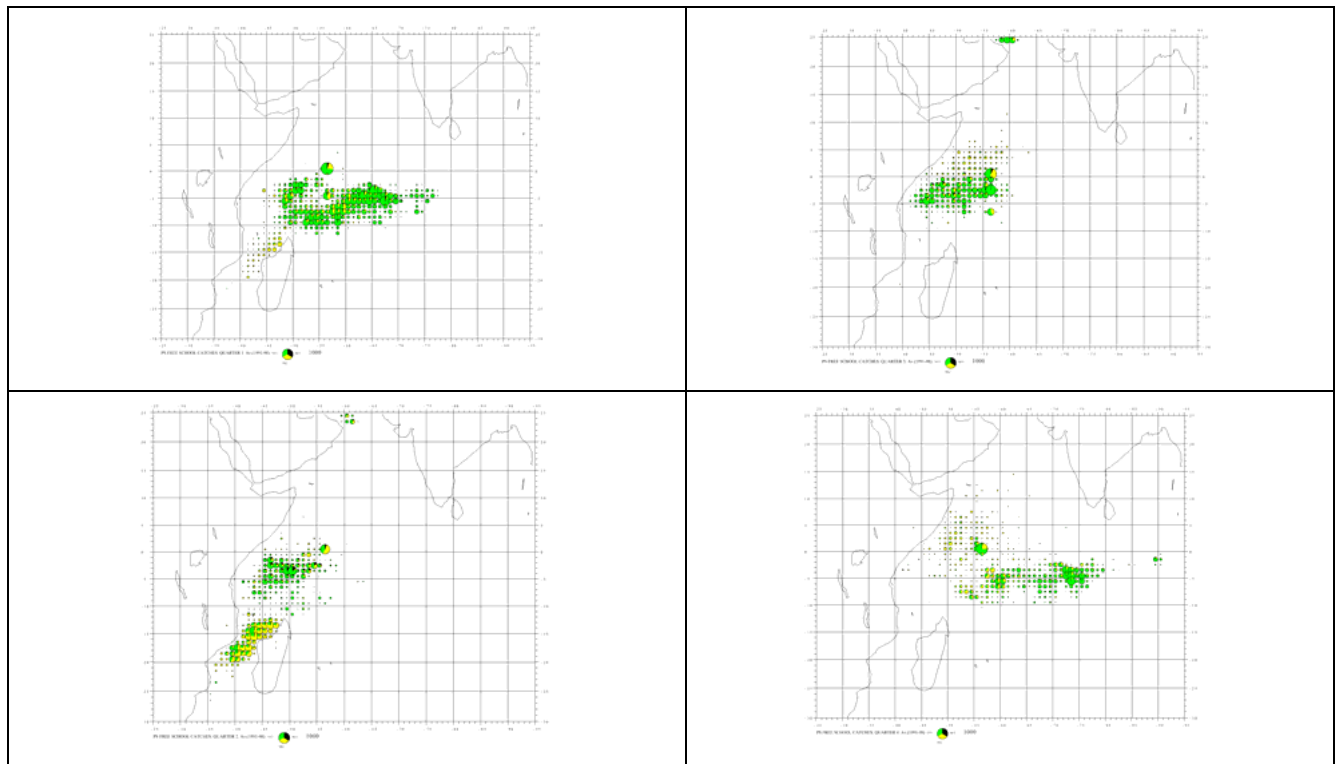


Figure 1 – Mean quarterly catch distribution of the European and associated purse seine fishery on free schools in the Indian Ocean, 1991-1998.

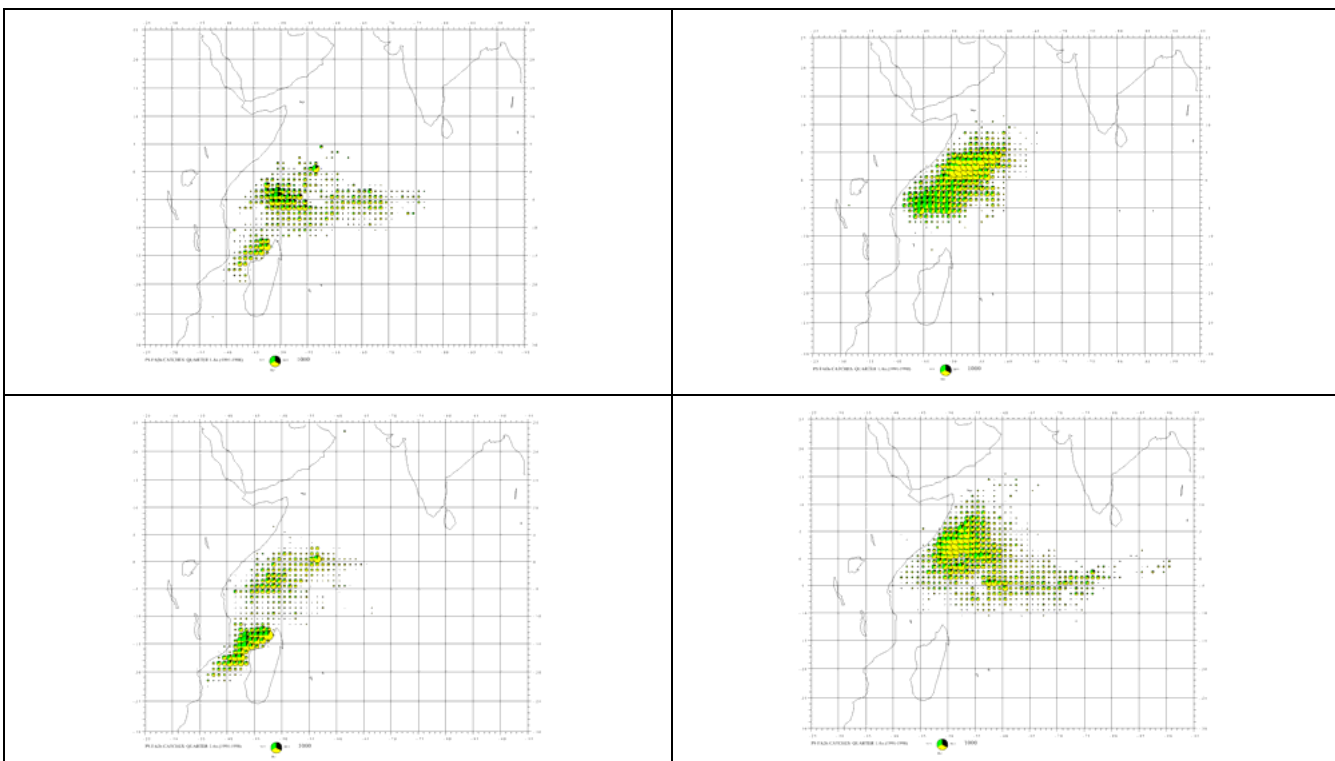


Figure 2 – Mean quarterly catch distribution of the European and associated purse seine fishery on log schools in the Indian Ocean, 1991-1998.

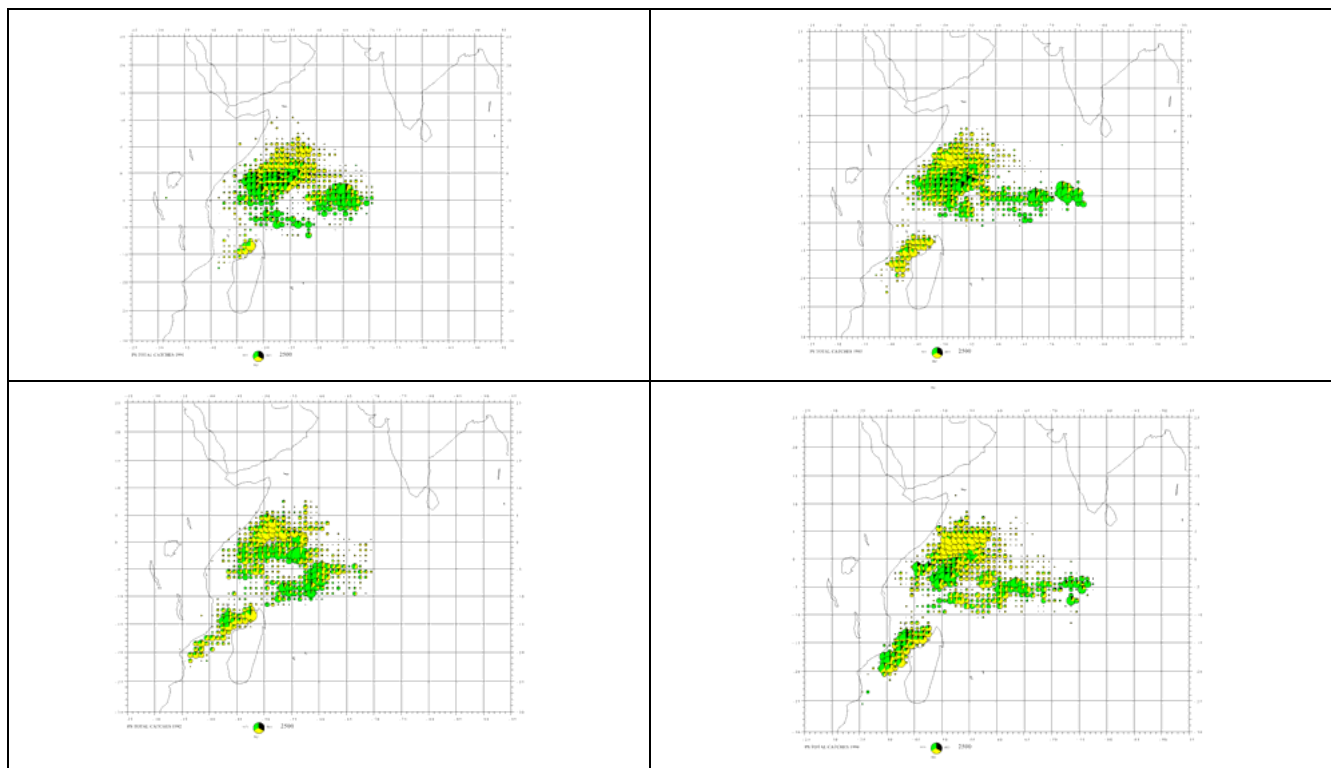


Figure 3 – Total annual catch distribution of the European anchovy associated purse seine fishery in the Indian Ocean, 1991-1998.

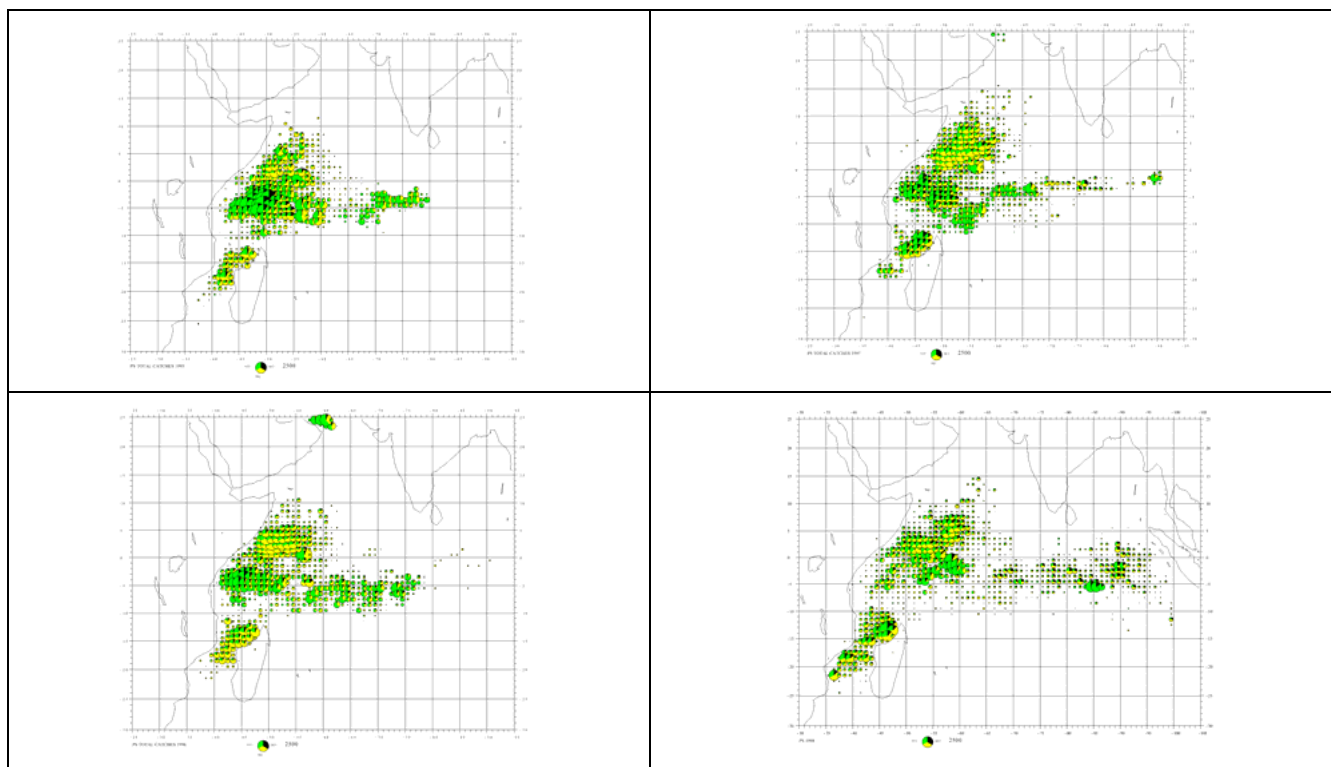


Figure 3 – Total annual catch distribution of the European anchovy associated purse seine fishery in the Indian Ocean, 1991-1998.

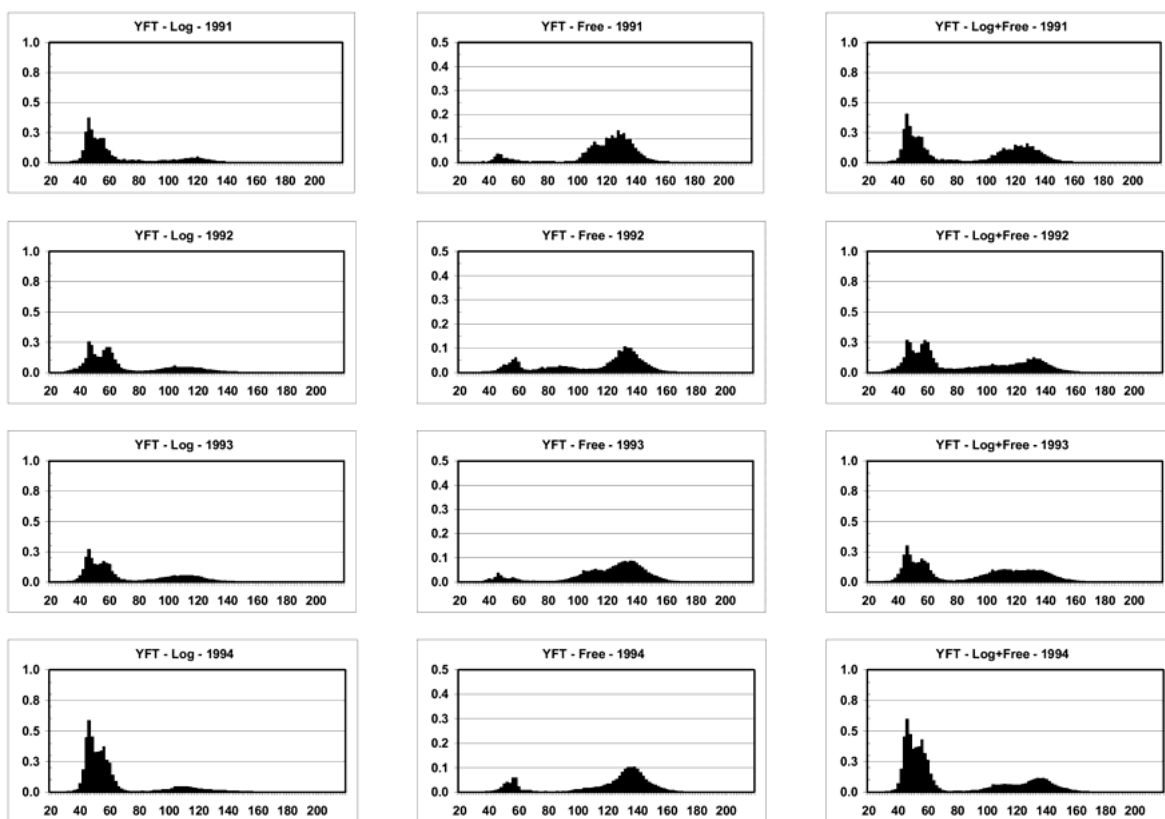


Figure 3a – Total annual catch distribution of the European and associated purse seine fishery in the Indian Ocean, YFT 1991-1994

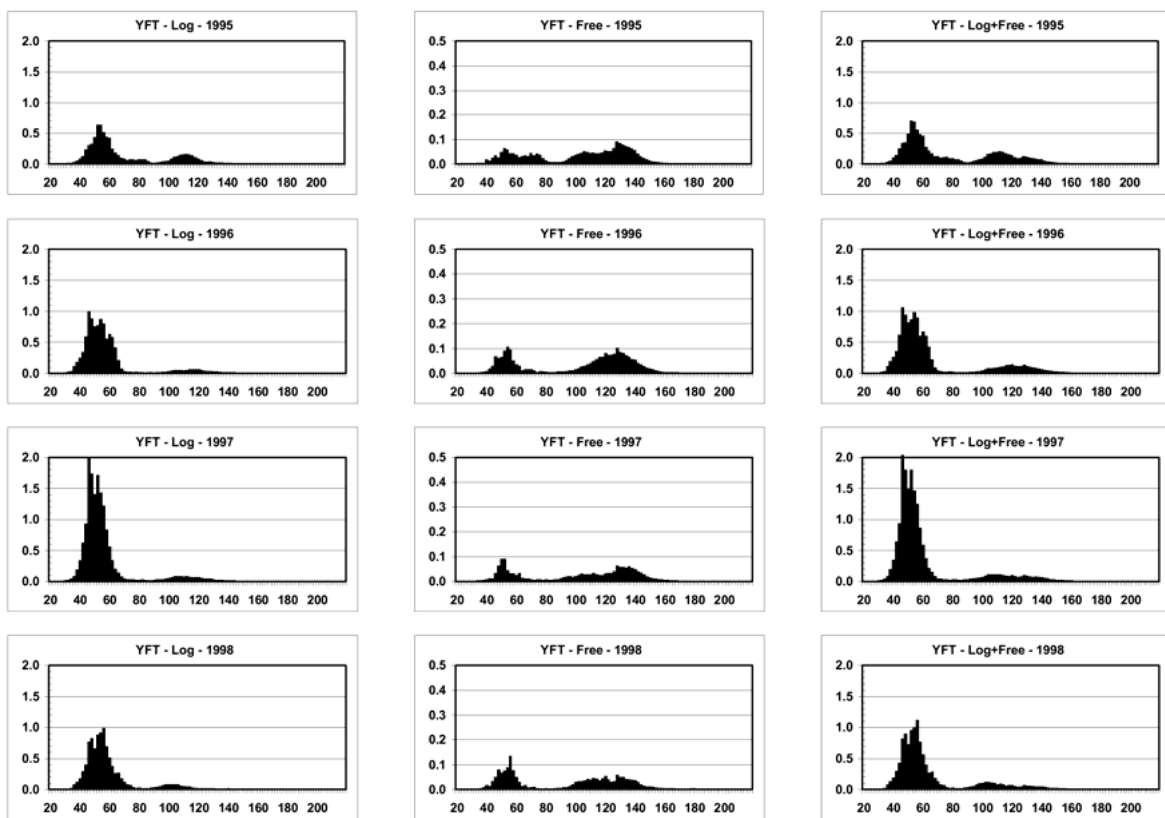


Figure 3b – Total annual catch distribution of the European and associated purse seine fishery in the Indian Ocean, YFT 1995-1998

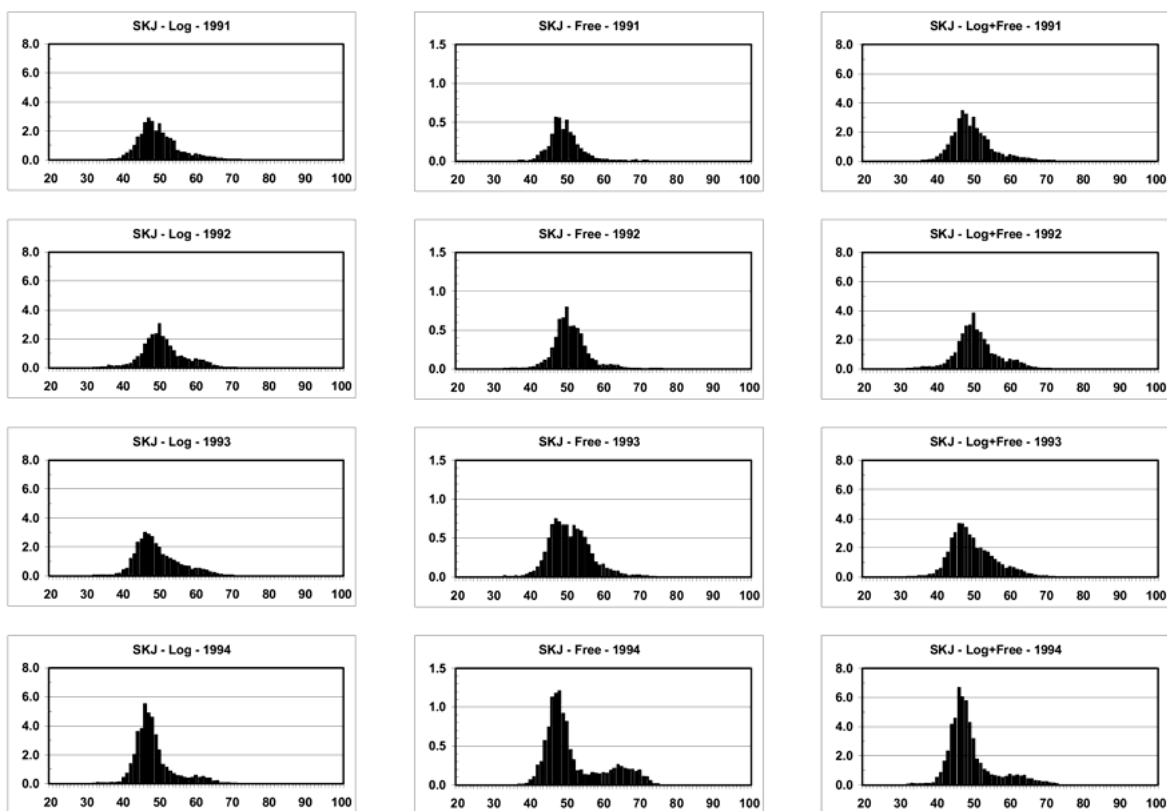


Figure 3b – Total annual catch distribution of the European and associated purse seine fishery in the Indian Ocean, SKJ 1991-1994

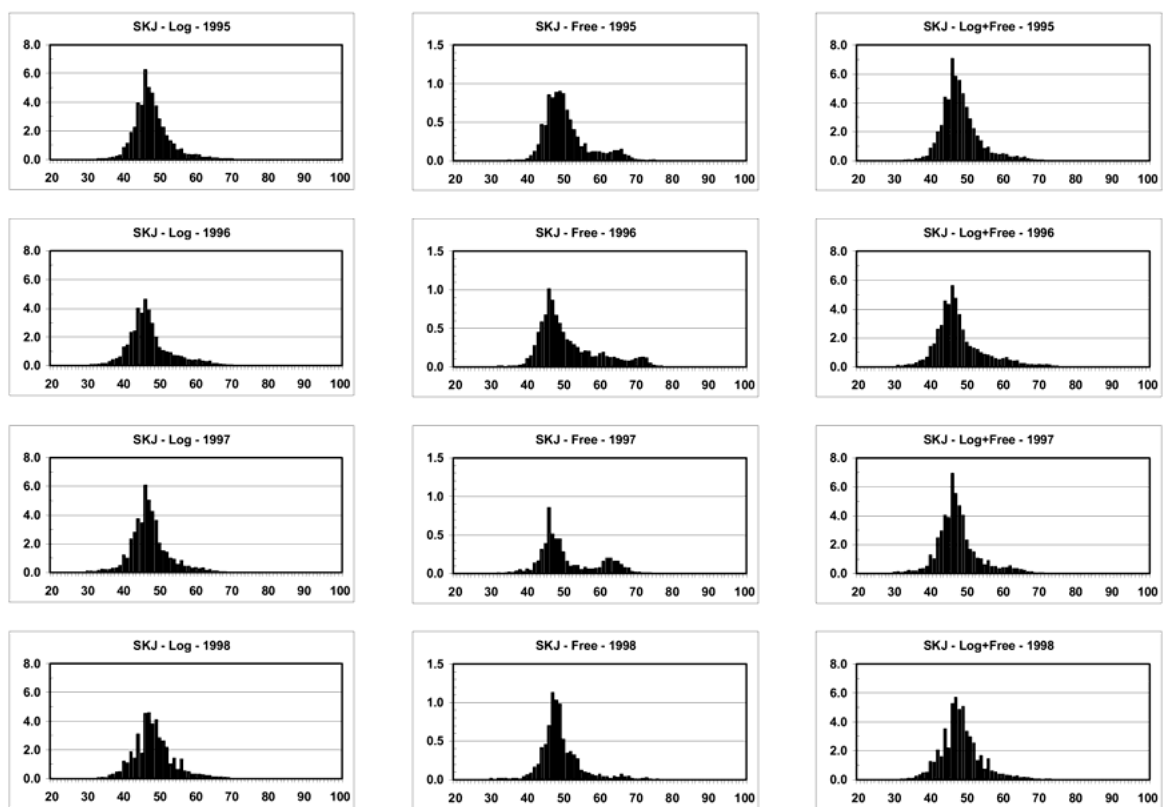


Figure 3b – Total annual catch distribution of the European and associated purse seine fishery in the Indian Ocean, SKJ 1995-1998

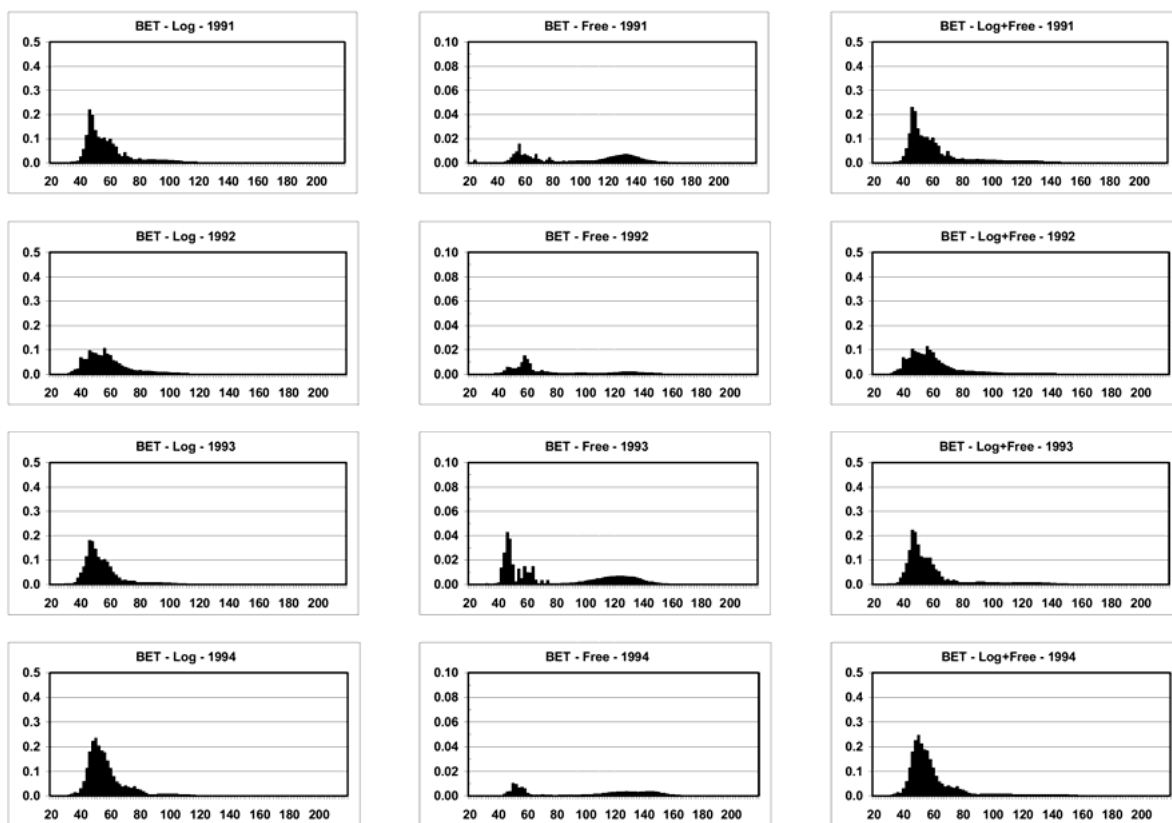


Figure 3b – Total annual catch distribution of the European and associated purse seine fishery in the Indian Ocean, BET 1991-1994

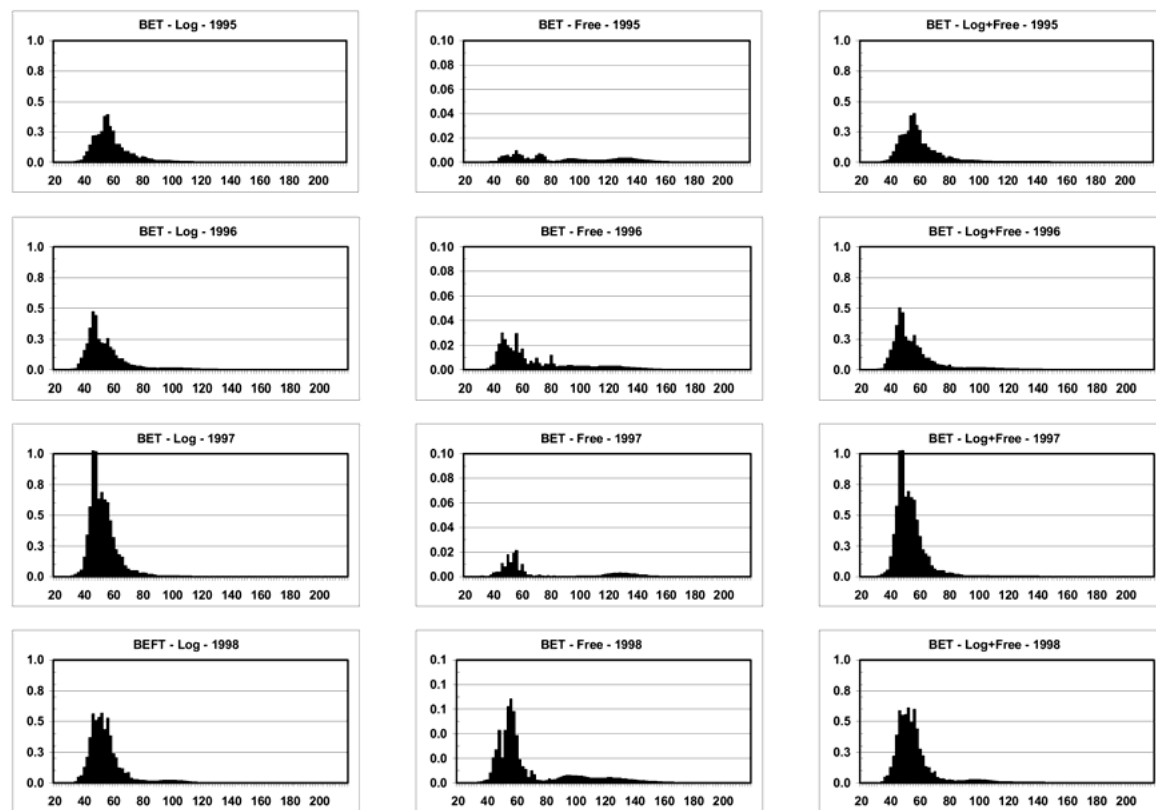


Figure 3b – Total annual catch distribution of the European and associated purse seine fishery in the Indian Ocean, BET 1995-1998