

Statistics of the main purse seine fleets fishing in the Indian Ocean (1981-2003)

by

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Résumé

Ce document présente un résumé des principales activités des flottilles de senneurs espagnols, français, italien, seychellois et NEI relevant de l'UE dans l'océan Indien depuis 1981 : efforts, prises par espèces et type de pêche (bancs sur objet, bancs libre et combinés), captures par unité d'effort, échantillonnages et poids moyen de la capture des principales espèces.

Abstract

This document presents a summary of the statistics of French, Spanish, Italian, Seychelles and EU related NEI purse seine fleets fishing in the Indian Ocean since 1981: effort, catch by species and fishing type (log and free swimming schools), catch per unit of effort, sampling and mean weights for the main species.

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Table 1a : Number of purse seiners according to their GRT category and total carrying capacity

Year	50-400	401-600	601-800	801-1200	1201-2000	> 2000	Total	Carrying capacity	Supplies	VAS *
1981	1	0	0	1	0	0	2	129		
1982	1	1	0	2	0	0	4	820		
1983	1	6	0	5	0	0	12	3 729		
1984	1	14	8	19	5	0	47	23 642		
1985	1	13	8	19	7	0	48	29 209		
1986	0	9	7	16	3	0	35	25 562		
1987	1	6	7	15	6	0	35	25 942		
1988	1	6	7	18	8	0	40	31 550		
1989	1	6	8	20	9	0	44	37 204		
1990	0	7	8	20	11	0	46	34 525		
1991	0	4	6	20	9	0	39	33 781	NA	NA
1992	0	4	3	21	11	0	39	35 061	NA	NA
1993	0	4	3	21	13	1	42	39 521	NA	NA
1994	0	4	4	20	13	1	42	40 113	NA	NA
1995	0	4	4	20	13	1	42	42 153	NA	NA
1996	0	3	5	21	17	1	47	45 384	NA	NA
1997	0	3	4	23	27	1	58	56 796	NA	NA
1998	0	3	5	20	25	0	53	54 669	NA	NA
1999	0	2	5	20	25	0	52	51 875	10	10
2000	1	1	4	19	23	2	50	52 740	11	13
2001	1	1	3	21	22	2	50	53 519	7	9
2002	0	1	4	20	21	3	49	55 410	8	9
2003	0	0	2	18	20	4	44	52 177	8	9

*Vessel associated with supply

Table 1b : Number of purse seiners according to their flag

Year	France	Spain	Ivory Coast	Panama	Seychelle	Malta	St Vincent	Iran	Italy	Belize	Dutch Antilles	Total
1981	2											2
1982	4											4
1983	12											12
1984	26	14	7	1		1						49
1985	26	16	6	1		1						50
1986	22	12	1	1		1						37
1987	21	14		1		1						37
1988	21	18		1		2						42
1989	21	21		1		2						45
1990	21	21		3		2						47
1991	18	17		3		1						39
1992	17	18		3		1						39
1993	17	19		4		2				4		46
1994	17	18		3						4		42
1995	17	19		3		1				4		44
1996	17	22		3				1		4		47
1997	19	23		4	5		4		1	5	4	65
1998	16	20		2	5			1	1	4	4	53
1999	15	20		2	5			1	1	4	4	52
2000	15	17		1	6			1	1	5	5	51
2001	19	17		1	10				1	5	4	57
2002	16	18		1	7			3	1		4	50
2003	14	18		1	11				1	1	4	50

Table 2 : Fishing effort expressed as carrying capacity (GRT), fishing days, searching days and standardized fishing days

Year	Carrying capacity	Fishing days	Searching days
1981	129	84	0
1982	820	256	221
1983	3 729	1 461	1 142
1984	23 642	8 041	6 502
1985	29 209	9 929	8 302
1986	25 562	8 597	6 907
1987	25 942	8 246	6 484
1988	31 550	9 135	7 244
1989	37 204	10 880	9 030
1990	34 525	10 628	8 880
1991	33 781	9 767	7 985
1992	35 061	9 944	8 162
1993	39 521	11 109	9 342
1994	40 113	11 061	9 228
1995	42 153	11 848	10 004
1996	45 384	12 380	10 510
1997	56 796	14 883	12 930
1998	54 669	14 648	12 667
1999	51 875	13 339	11 363
2000	52 740	12 635	10 657
2001	53 519	12 911	10 978
2002	55 410	12 864	10 851
2003	52 177	11 312	9 202

Table 3 : Total number of one degree squares explored, with at least one set, with catches and with an effort greater than 1 and 5 fishing days

Year	Number of one degree squares				
	Explored	With at least one set	With catches	With an effort > 1 fishing day	With an effort > 5 fishing days
1981	66	24	23	65	8
1982	114	47	40	55	11
1983	224	112	101	142	60
1984	611	322	300	400	223
1985	509	405	383	431	336
1986	440	337	327	371	267
1987	435	357	342	363	256
1988	459	352	340	370	263
1989	479	387	369	405	281
1990	496	425	412	427	313
1991	486	416	403	403	294
1992	498	438	429	436	333
1993	498	411	407	430	304
1994	564	477	467	485	349
1995	537	457	453	468	329
1996	679	535	527	553	399
1997	769	591	571	631	421
1998	1 007	785	773	823	547
1999	810	643	628	640	424
2000	781	588	568	592	389
2001	598	518	508	516	389
2002	736	599	578	582	428
2003	639	523	510	513	350

Table 4 : Number of sets (total, positives and null) by fishing mode.

Years	Combined			Log schools			Free swimming schools		
	Total	Positives	Null	Total	Positives	Null	Total	Positives	Null
1981	43	33	10	0	0	0	0	0	0
1982	143	105	38	72	63	9	71	42	29
1983	1 068	766	302	548	467	81	520	299	221
1984	5 894	3 491	2 403	1 588	1 332	256	4 306	2 159	2 147
1985	6 993	4 289	2 704	2 245	2 015	230	4 748	2 274	2 474
1986	7 221	3 904	3 317	2 366	1 996	370	4 855	1 908	2 947
1987	8 446	4 940	3 506	3 315	2 749	566	5 131	2 191	2 940
1988	9 377	5 638	3 739	2 693	2 415	278	6 684	3 223	3 461
1989	9 013	5 590	3 423	3 672	3 222	450	5 341	2 368	2 973
1990	8 967	5 911	3 056	3 123	2 846	277	5 844	3 065	2 779
1991	7 803	5 493	2 310	3 419	3 199	220	4 384	2 294	2 090
1992	8 793	6 227	2 566	3 444	3 246	198	5 349	2 981	2 368
1993	9 059	6 350	2 709	3 701	3 441	260	5 358	2 909	2 449
1994	9 817	7 051	2 766	4 313	3 949	364	5 504	3 102	2 402
1995	9 799	7 343	2 456	5 164	4 790	374	4 635	2 553	2 082
1996	10 053	7 733	2 320	5 007	4 670	337	5 046	3 063	1 983
1997	10 334	8 509	1 825	6 842	6 398	444	3 492	2 111	1 381
1998	10 698	8 300	2 398	6 676	6 130	546	4 022	2 170	1 852
1999	10 286	8 062	2 224	5 945	5 557	388	4 341	2 505	1 836
2000	10 311	8 132	2 179	5 824	5 341	483	4 487	2 791	1 696
2001	10 290	7 845	2 445	5 246	4 956	290	5 044	2 889	2 155
2002	10 308	8 356	1 952	6 112	5 840	272	4 196	2 516	1 680
2003	9 999	7 402	2 597	4 790	4 460	330	5 209	2 942	2 267

Table 5 : Set size distribution according to the fishing mode (combined, log schools and free swimming schools)

Catch	0.1 10	10.1 20	20.1 30	30.1 40	40.1 50	50.1 60	60.1 70	70.1 80	80.1 90	90.1 100	>100
Combined											
1981											
1982	41	27	13	6	8	3	1	0	4	1	1
1983	151	168	127	63	54	62	38	29	24	8	42
1984	729	760	523	333	309	193	139	132	91	68	214
1985	1078	994	593	415	283	234	143	126	80	67	276
1986	799	812	575	376	310	243	147	128	99	63	352
1987	1011	1141	740	519	326	249	216	148	131	83	376
1988	938	1165	890	615	470	323	233	202	176	122	502
1989	1050	1191	840	599	429	312	208	166	148	112	535
1990	1081	1309	1013	739	455	324	207	196	117	94	375
1991	908	1085	904	658	504	337	258	167	139	128	399
1992	1073	1347	1053	749	516	373	282	179	139	113	403
1993	1013	1295	989	711	545	401	282	241	173	150	549
1994	1047	1476	1171	794	558	450	324	233	198	145	650
1995	1108	1433	1194	827	650	436	338	274	226	171	686
1996	1374	1777	1272	909	610	436	302	244	211	139	459
1997	1688	2011	1393	1027	671	442	311	257	140	127	436
1998	1771	2098	1446	941	574	393	258	223	132	86	377
1999	1302	1624	1246	887	650	474	432	307	219	156	763
2000	1311	1737	1238	862	631	509	328	307	240	151	815
2001	1382	1758	1258	891	588	471	332	239	191	137	592
2002	1186	1702	1268	927	707	524	370	303	246	179	942
2003	881	1292	988	792	607	504	383	303	245	177	1227

Table 5 (continuation) : Set size distribution according to the fishing mode
(combined, log schools and free swimming schools)

Catch	0.1 10	10.1 20	20.1 30	30.1 40	40.1 50	50.1 60	60.1 70	70.1 80	80.1 90	90.1 100	>100
Log schools											
1981											
1982	24	18	9	0	3	2	1	0	4	1	1
1983	113	125	83	35	26	22	24	15	6	4	14
1984	252	298	185	137	113	73	48	57	38	33	98
1985	437	425	279	203	149	117	73	65	47	38	182
1986	368	415	315	195	152	140	76	64	51	37	183
1987	533	677	428	313	174	148	107	64	62	40	203
1988	330	504	394	264	208	147	95	85	80	51	256
1989	613	725	504	381	267	178	106	97	70	57	224
1990	442	647	520	368	239	144	95	100	65	50	176
1991	480	694	564	406	296	203	138	89	90	59	176
1992	489	709	545	383	268	207	159	94	81	65	246
1993	520	754	544	398	300	226	153	133	95	70	248
1994	502	852	692	505	354	247	167	129	103	72	324
1995	661	924	783	563	434	273	236	179	144	126	467
1996	777	1063	774	573	363	280	195	159	121	94	271
1997	1249	1527	1047	800	493	330	227	189	110	103	319
1998	1291	1579	1096	715	410	292	182	165	96	56	248
1999	743	1047	844	640	464	364	337	236	159	118	604
2000	726	1067	819	594	423	336	236	219	185	109	625
2001	781	1151	819	597	370	290	201	154	119	94	377
2002	742	1199	890	664	484	371	278	224	180	122	685
2003	541	801	592	482	377	290	228	193	144	100	709
Free swimming school											
1981											
1982	17	9	4	6	5	1	0	0	0	0	0
1983	38	43	44	28	28	40	14	14	18	4	28
1984	477	462	338	196	196	120	91	75	53	35	116
1985	641	569	314	212	134	117	85	68	40	29	94
1986	431	397	260	181	158	103	71	64	48	26	169
1987	478	464	312	206	152	101	109	84	69	43	173
1988	608	661	496	351	262	176	138	117	96	71	246
1989	437	466	336	218	162	134	102	69	78	55	311
1990	639	662	493	371	216	180	112	96	52	44	199
1991	428	391	340	252	208	134	120	78	49	69	223
1992	584	638	508	366	248	166	123	85	58	48	157
1993	493	541	445	313	245	175	129	108	78	80	301
1994	545	624	479	289	204	203	157	104	95	73	326
1995	447	509	411	264	216	163	102	95	82	45	219
1996	597	714	498	336	247	156	107	85	90	45	188
1997	439	484	346	227	178	112	84	68	30	24	117
1998	480	519	350	226	164	101	76	58	36	30	129
1999	559	577	402	247	186	110	95	71	60	38	159
2000	585	670	419	268	208	173	92	88	55	42	190
2001	601	607	439	294	218	181	131	85	72	43	215
2002	444	503	378	263	223	153	92	79	66	57	257
2003	340	491	396	310	230	214	155	110	101	77	518

Table 6: Catches by species (metric tons) and effort (as fishing days and positive sets number) according to the fishing mode (combined, log schools and free swimming schools)

Year	YFT	SKJ	BET	ALB	Others	Total	Fishing days	Positive sets number
Log schools								
1981	62	123	10	0	0	195	87	
1982	391	912	8	0	0	1 311	263	63
1983	3 444	7 715	212	0	0	11 371	1 475	467
1984	10 673	29 062	2 102	7	0	41 844	8 041	1 332
1985	22 836	44 617	4 793	20	0	72 266	9 929	2 015
1986	24 213	41 851	7 642	0	0	73 706	8 597	1 996
1987	34 862	41 002	8 318	4	0	84 186	8 246	2 749
1988	30 161	61 375	8 079	0	0	99 615	9 135	2 415
1989	33 298	68 931	6 943	0	0	109 172	10 880	3 222
1990	26 367	66 223	5 558	157	0	98 305	10 628	2 846
1991	21 331	80 219	8 655	55	25	110 285	9 767	3 199
1992	29 130	83 465	6 805	15	0	119 415	9 944	3 246
1993	31 119	89 003	6 443	10	0	126 575	11 109	3 441
1994	31 285	105 837	10 083	90	1	147 296	11 061	3 949
1995	66 374	113 108	19 132	53	0	198 667	11 848	4 790
1996	51 829	93 898	18 430	97	1	164 255	12 380	4 670
1997	72 926	105 462	28 573	196	1	207 158	14 883	6 398
1998	49 773	110 758	18 988	138	0	179 657	14 648	6 130
1999	75 634	137 777	30 391	108	18	243 928	13 339	5 557
2000	71 946	145 755	20 117	123	1 025	238 966	12 635	5 341
2001	42 406	131 650	15 580	240	506	190 382	12 911	4 956
2002	56 505	191 914	22 898	16	1 152	272 485	12 864	5 840
2003	72 132	155 079	12 657	6	308	240 181	11 312	4 460
Free swimming schools								
1981	137	40	0	0	0	177	87	
1982	637	115	0	0	0	752	263	42
1983	7 061	1 651	6	0	0	8 718	1 475	299
1984	45 783	12 822	1 459	551	0	60 615	8 041	2 159
1985	42 936	10 649	1 367	706	0	55 658	9 929	2 274
1986	44 397	18 632	2 309	179	0	65 517	8 597	1 908
1987	43 473	27 290	4 364	235	0	75 362	8 246	2 191
1988	82 619	21 447	5 733	266	0	110 065	9 135	3 223
1989	50 760	46 250	3 054	6	0	100 070	10 880	2 368
1990	74 703	21 709	4 931	160	0	101 503	10 628	3 065
1991	72 756	11 763	4 340	2 189	13	91 061	9 767	2 294
1992	62 042	19 103	1 521	3 241	1	85 908	9 944	2 981
1993	71 694	27 847	5 922	1 279	1	106 743	11 109	2 909
1994	67 338	38 655	3 684	2 483	1	112 161	11 061	3 102
1995	57 724	27 438	3 783	1 202	0	90 147	11 848	2 553
1996	60 671	31 100	3 325	1 429	1 286	97 811	12 380	3 063
1997	43 948	17 956	2 171	1 765	208	66 048	14 883	2 111
1998	39 420	21 315	5 956	1 238	1	67 930	14 648	2 170
1999	44 544	31 173	5 196	433	813	82 159	13 339	2 505
2000	58 771	25 038	5 402	1 039	1 754	92 004	12 635	2 791
2001	72 033	25 279	3 902	991	18	102 223	12 911	2 889
2002	73 682	20 259	4 045	687	4 227	102 900	12 864	2 516
2003	128 337	29 340	6 970	1 478	80	166 204	11 312	2 942

Table 6 (continuation): Catches by species (metric tons) and effort (as fishing days and positive sets number) according to the fishing mode (combined, log schools and free swimming schools)

Year	YFT	SKJ	BET	ALB	Others	Total	Fishing days	Positive sets number
Combined								
1981	199	163	10	0	0	372	87	33
1982	1 028	1 027	8	0	0	2 063	263	105
1983	10 505	9 366	218	0	0	20 089	1 475	766
1984	56 456	41 884	3 561	558	0	102 459	8 041	3 491
1985	65 772	55 266	6 160	726	0	127 924	9 929	4 289
1986	68 610	60 483	9 951	179	0	139 223	8 597	3 904
1987	78 335	68 292	12 682	239	0	159 548	8 246	4 940
1988	112 780	82 822	13 812	266	0	209 680	9 135	5 638
1989	84 058	115 181	9 997	6	0	209 242	10 880	5 590
1990	101 070	87 932	10 489	317	0	199 808	10 628	5 911
1991	94 087	91 983	12 994	2 243	40	201 347	9 767	5 493
1992	91 172	102 569	8 326	3 256	0	205 323	9 944	6 227
1993	102 814	116 850	12 365	1 289	0	233 318	11 109	6 350
1994	98 623	144 492	13 767	2 574	1	259 457	11 061	7 051
1995	124 098	140 546	22 916	1 254	0	288 814	11 848	7 343
1996	112 501	124 998	21 755	1 526	1 286	262 066	12 380	7 733
1997	116 875	123 418	30 744	1 961	208	273 206	14 883	8 509
1998	89 193	132 073	24 945	1 376	0	247 587	14 648	8 300
1999	120 179	168 950	35 587	542	829	326 087	13 339	8 062
2000	130 717	170 793	25 519	1 162	2 779	330 970	12 635	8 132
2001	114 439	156 929	19 482	1 230	525	292 605	12 911	7 845
2002	130 187	212 173	26 943	703	5 379	375 386	12 864	8 356
2003	200 469	184 419	19 626	1 484	387	406 386	11 312	7 402

Table 7: Catches by species (metric tons) and efforts (fishing days and positive sets number) according to the FAO area (51 and 57)

Year	YFT	SKJ	BET	ALB	Others	Total	Fishing days	Positive sets number
West (FAO 51)								
1981	199	163	10	0	0	372	87	33
1982	1 028	1 027	8	0	0	2 063	263	105
1983	10 505	9 366	218	0	0	20 089	1 475	766
1984	56 456	41 884	3 561	558	0	102 459	8 065	2 889
1985	65 772	55 266	6 160	726	0	127 924	9 964	2 892
1986	68 610	60 483	9 951	179	0	139 223	8 615	2 671
1987	78 335	68 292	12 682	239	0	159 548	8 283	3 031
1988	112 780	82 822	13 812	266	0	209 680	9 183	3 177
1989	84 058	115 181	9 997	6	0	209 242	10 917	2 550
1990	101 070	87 932	10 489	317	0	199 808	10 659	3 035
1991	94 087	91 983	12 994	2 243	40	201 347	9 766	5 493
1992	91 172	102 569	8 326	3 256	0	205 323	9 944	6 227
1993	102 814	116 850	12 365	1 289	0	233 318	11 109	6 350
1994	98 623	144 492	13 767	2 574	1	259 457	11 061	7 051
1995	124 098	140 546	22 916	1 254	0	288 814	11 848	7 343
1996	112 443	124 769	21 706	1 526	1 286	261 730	12 340	7 722
1997	114 885	122 151	30 446	1 961	208	269 651	14 763	8 431
1998	75 683	119 771	18 190	1 369	0	215 013	12 496	7 280
1999	119 625	168 194	35 389	542	828	324 578	13 218	8 020
2000	130 610	170 587	25 477	1 162	2 778	330 614	12 587	8 111
2001	114 439	156 929	19 482	1 230	525	292 605	12 911	7 845
2002	130187	212173	26943	703	5379	375386	12862	8356
2003	200 469	184 419	19 626	1 484	387	406 386	11 312	7 402
East (FAO 57)								
1981	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0
1984	1	2	0	0	0	3	34	1
1985	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	1	0
1992	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0
1996	58	228	49	0	1	336	40	11
1997	1 990	1 267	298	0	0	3 554	120	78
1998	13 533	12 298	6 737	7	0	32 574	2 152	1 020
1999	554	757	197	0	0	1 508	120	42
2000	112	200	44	0	0	356	48	21
2001	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	2	0
2003	0	0	0	0	0	0	0	0

Table 8: Catch per unit of effort (as tons per fishing days and by positive set) according to the fishing mode (combined, log schools and free swimming schools)

Year	CPUE (tons per fishing day)						CPUE (tons per positive set)					
	YFT	SKJ	BET	ALB	Others	Total	YFT	SKJ	BET	ALB	Others	Total
Combined												
1981	2.29	1.87	0.11	0.00	0.00	4.28	6.03	4.94	0.30	0.00	0.00	11.27
1982	3.91	3.90	0.03	0.00	0.00	7.84	9.79	9.78	0.08	0.00	0.00	19.65
1983	7.12	6.35	0.15	0.00	0.00	13.62	13.71	12.23	0.28	0.00	0.00	26.23
1984	7.02	5.21	0.44	0.07	0.00	12.74	16.17	12.00	1.02	0.16	0.00	29.35
1985	6.62	5.57	0.62	0.07	0.00	12.88	15.34	12.89	1.44	0.17	0.00	29.83
1986	7.98	7.04	1.16	0.02	0.00	16.19	17.57	15.49	2.55	0.05	0.00	35.66
1987	9.50	8.28	1.54	0.03	0.00	19.35	15.86	13.82	2.57	0.05	0.00	32.30
1988	12.35	9.07	1.51	0.03	0.00	22.95	20.00	14.69	2.45	0.05	0.00	37.19
1989	7.73	10.59	0.92	0.00	0.00	19.23	15.04	20.60	1.79	0.00	0.00	37.43
1990	9.51	8.27	0.99	0.03	0.00	18.80	17.10	14.88	1.77	0.05	0.00	33.80
1991	9.63	9.42	1.33	0.23	0.00	20.62	17.13	16.75	2.37	0.41	0.01	36.66
1992	9.17	10.31	0.84	0.33	0.00	20.65	14.64	16.47	1.34	0.52	0.00	32.97
1993	9.26	10.52	1.11	0.12	0.00	21.00	16.19	18.40	1.95	0.20	0.00	36.74
1994	8.92	13.06	1.24	0.23	0.00	23.46	13.99	20.49	1.95	0.37	0.00	36.80
1995	10.47	11.86	1.93	0.11	0.00	24.38	16.90	19.14	3.12	0.17	0.00	39.33
1996	9.09	10.10	1.76	0.12	0.10	21.17	14.55	16.16	2.81	0.20	0.17	33.89
1997	7.85	8.29	2.07	0.13	0.01	18.36	13.74	14.50	3.61	0.23	0.02	32.11
1998	6.09	9.02	1.70	0.09	0.00	16.90	10.75	15.91	3.01	0.17	0.00	29.83
1999	9.01	12.67	2.67	0.04	0.06	24.45	14.91	20.96	4.41	0.07	0.10	40.45
2000	10.35	13.52	2.02	0.09	0.22	26.19	16.07	21.00	3.14	0.14	0.34	40.70
2001	8.86	12.15	1.51	0.10	0.04	22.66	14.59	20.00	2.48	0.16	0.07	37.30
2002	10.12	16.49	2.09	0.05	0.42	29.18	15.58	25.39	3.22	0.08	0.64	44.92
2003	17.72	16.30	1.73	0.13	0.03	35.93	27.08	24.91	2.65	0.20	0.05	54.90
Log schools												
1981	0.71	1.41	0.11	0.00	0.00	2.24						
1982	1.49	3.47	0.03	0.00	0.00	4.98	6.21	14.48	0.13	0.00	0.00	20.81
1983	2.33	5.23	0.14	0.00	0.00	7.71	7.37	16.52	0.45	0.00	0.00	24.35
1984	1.33	3.61	0.26	0.00	0.00	5.20	8.01	21.82	1.58	0.01	0.00	31.41
1985	2.30	4.49	0.48	0.00	0.00	7.28	11.33	22.14	2.38	0.01	0.00	35.86
1986	2.82	4.87	0.89	0.00	0.00	8.57	12.13	20.97	3.83	0.00	0.00	36.93
1987	4.23	4.97	1.01	0.00	0.00	10.21	12.68	14.92	3.03	0.00	0.00	30.62
1988	3.30	6.72	0.88	0.00	0.00	10.90	12.49	25.41	3.35	0.00	0.00	41.25
1989	3.06	6.34	0.64	0.00	0.00	10.03	10.33	21.39	2.15	0.00	0.00	33.88
1990	2.48	6.23	0.52	0.01	0.00	9.25	9.26	23.27	1.95	0.06	0.00	34.54
1991	2.18	8.21	0.89	0.01	0.00	11.29	6.67	25.08	2.71	0.02	0.01	34.47
1992	2.93	8.39	0.68	0.00	0.00	12.01	8.97	25.71	2.10	0.00	0.00	36.79
1993	2.80	8.01	0.58	0.00	0.00	11.39	9.04	25.87	1.87	0.00	0.00	36.78
1994	2.83	9.57	0.91	0.01	0.00	13.32	7.92	26.80	2.55	0.02	0.00	37.30
1995	5.60	9.55	1.61	0.00	0.00	16.77	13.86	23.61	3.99	0.01	0.00	41.48
1996	4.19	7.58	1.49	0.01	0.00	13.27	11.10	20.11	3.95	0.02	0.00	35.17
1997	4.90	7.09	1.92	0.01	0.00	13.92	11.40	16.48	4.47	0.03	0.00	32.38
1998	3.40	7.56	1.30	0.01	0.00	12.26	8.12	18.07	3.10	0.02	0.00	29.31
1999	5.67	10.33	2.28	0.01	0.00	18.29	13.61	24.79	5.47	0.02	0.00	43.90
2000	5.69	11.54	1.59	0.01	0.08	18.91	13.47	27.29	3.77	0.02	0.19	44.74
2001	3.28	10.20	1.21	0.02	0.04	14.75	8.56	26.56	3.14	0.05	0.10	38.41
2002	4.39	14.92	1.78	0.00	0.09	21.18	9.68	32.86	3.92	0.00	0.20	46.66
2003	6.38	13.71	1.12	0.00	0.03	21.23	16.17	34.77	2.84	0.00	0.07	53.85

Table 8 (continuation): Catch per unit of effort (as tons per fishing days and by positive set) according to the fishing mode (combined, log schools and free swimming schools)

Year	CPUE (tons per fishing day)						CPUE (tons per positive set)					
	YFT	SKJ	BET	ALB	Others	Total	YFT	SKJ	BET	ALB	Others	Total
Free swimming school												
1981	1.57	0.46	0.00	0.00	0.00	2.03						
1982	2.42	0.44	0.00	0.00	0.00	2.86	15.17	2.74	0.00	0.00	0.00	17.90
1983	4.79	1.12	0.00	0.00	0.00	5.91	23.62	5.52	0.02	0.00	0.00	29.16
1984	5.69	1.59	0.18	0.07	0.00	7.54	21.21	5.94	0.68	0.26	0.00	28.08
1985	4.32	1.07	0.14	0.07	0.00	5.61	18.88	4.68	0.60	0.31	0.00	24.48
1986	5.16	2.17	0.27	0.02	0.00	7.62	23.27	9.77	1.21	0.09	0.00	34.34
1987	5.27	3.31	0.53	0.03	0.00	9.14	19.84	12.46	1.99	0.11	0.00	34.40
1988	9.04	2.35	0.63	0.03	0.00	12.05	25.63	6.65	1.78	0.08	0.00	34.15
1989	4.67	4.25	0.28	0.00	0.00	9.20	21.44	19.53	1.29	0.00	0.00	42.26
1990	7.03	2.04	0.46	0.02	0.00	9.55	24.37	7.08	1.61	0.05	0.00	33.12
1991	7.45	1.20	0.44	0.22	0.00	9.32	31.72	5.13	1.89	0.95	0.01	39.70
1992	6.24	1.92	0.15	0.33	0.00	8.64	20.81	6.41	0.51	1.09	0.00	28.82
1993	6.45	2.51	0.53	0.12	0.00	9.61	24.65	9.57	2.04	0.44	0.00	36.69
1994	6.09	3.49	0.33	0.22	0.00	10.14	21.71	12.46	1.19	0.80	0.00	36.16
1995	4.87	2.32	0.32	0.10	0.00	7.61	22.61	10.75	1.48	0.47	0.00	35.31
1996	4.90	2.51	0.27	0.12	0.10	7.90	19.81	10.15	1.09	0.47	0.42	31.93
1997	2.95	1.21	0.15	0.12	0.01	4.44	20.82	8.51	1.03	0.84	0.10	31.29
1998	2.69	1.46	0.41	0.08	0.00	4.64	18.17	9.82	2.74	0.57	0.00	31.30
1999	3.34	2.34	0.39	0.03	0.06	6.16	17.78	12.44	2.07	0.17	0.32	32.80
2000	4.65	1.98	0.43	0.08	0.14	7.28	21.06	8.97	1.94	0.37	0.63	32.96
2001	5.58	1.96	0.30	0.08	0.00	7.92	24.93	8.75	1.35	0.34	0.01	35.38
2002	5.73	1.57	0.31	0.05	0.33	8.00	29.29	8.05	1.61	0.27	1.68	40.90
2003	11.35	2.59	0.62	0.13	0.01	14.69	43.62	9.97	2.37	0.50	0.03	56.49

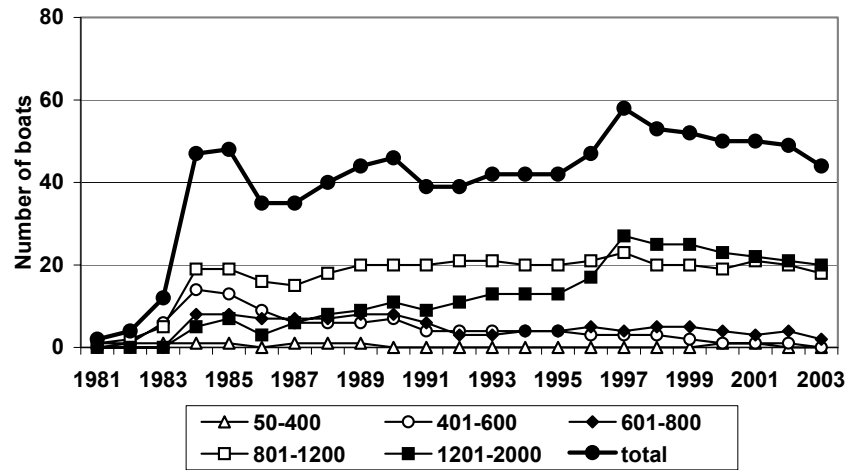
Table 9: Number of samples and number of measured fishes by species for all "European purse seiner fleets" in the Indian Ocean

Year	Sample number	Number of measured fishes				
		Yellowfin	Skipjack	Bigeye	Albacore	Total
1981						
1982	58	1 561	1 639			3 200
1983	70	1 515	2 132			3 647
1984	215	11 224	9 228	434		20 886
1985	458	23 608	28 257	4 283		56 148
1986	436	15 372	25 690	3 556		44 618
1987	508	23 460	36 685	4 304		64 449
1988	805	46 658	40 220	10 309	48	97 235
1989	541	37 377	45 409	5 442		88 228
1990	585	49 424	35 297	10 351	136	95 208
1991	598	64 456	48 508	20 599	1 656	135 219
1992	514	72 538	69 496	18 461	2 467	162 962
1993	380	58 013	46 789	14 882	858	120 542
1994	325	53 958	61 161	13 305	2 433	130 857
1995	429	106 815	115 979	36 528	2 112	261 434
1996	295	85 028	53 721	32 301	2 355	173 405
1997	202	55 369	26 332	28 684	685	111 070
1998	170	12 426	27 429	4 363	59	44 277
1999	205	17 173	49 757	5 893	184	73 007
2000	294	21 201	35 625	4 743	388	61 957
2001	850	80 389	32 790	21 509	2 031	136 719
2002	1 028	93 219	43 147	24 079	449	160 894
2003	1 909	133716	40890	18519	3010	196 135

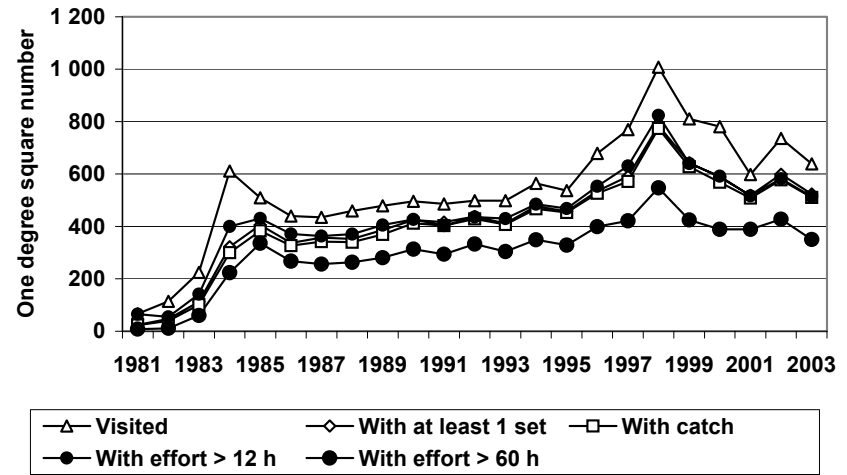
Table 10: Mean weight by species according to the fishing mode (combined, log schools and free swimming schools) of the French purse seiners in the Indian Ocean

Species	YFT			SKJ			BET			ALB		
	Log	Free	Total	Log	Free	Total	Log	Free	Total	Log	Free	Total
1981												
1982	3,9	36,1	8,5									
1983	5,1	35,0	12,1	2,5	2,5	2,5						
1984	5,5	25,7	15,1	2,8	3,0	2,9	4,5	13,0	6,1			
1985	4,2	26,8	9,3	3,0	3,3	3,0	4,9	7,4	5,3			
1986	11,5	20,1	15,9	3,2	3,5	3,3	6,0	10,6	6,7			
1987	10,2	27,6	15,7	3,3	4,2	3,6	5,5	5,9	5,6			
1988	5,1	30,6	13,1	2,9	2,9	2,9	3,8	5,5	4,4			
1989	7,3	16,2	10,9	3,2	3,2	3,2	3,8	5,1	4,1			
1990	5,9	19,6	12,3	2,7	3,1	2,8	4,2	16,0	6,4			
1991	7,9	37,3	20,2	2,8	2,7	2,8	5,4	23,5	7,2	31,3	31,4	31,4
1992	9,8	34,2	19,1	3,0	3,0	3,0	5,3	13,5	5,9	30,3	30,1	30,1
1993	10,7	39,6	21,7	2,7	3,0	2,8	4,3	23,6	7,1	30,5	31,4	31,4
1994	6,9	40,3	15,8	2,5	3,3	2,7	4,7	33,5	6,1	30,5	30,4	30,4
1995	9,6	27,2	13,7	2,4	3,0	2,5	5,3	22,8	6,1	29,3	28,9	28,9
1996	5,3	28,6	9,5	2,4	3,2	2,5	4,8	11,9	5,3	28,3	30,4	30,2
1997	4,7	28,8	6,9	2,3	3,2	2,4	3,7	13,6	3,9	27,4	27,1	27,1
1998	7,1	14,7	9,2	2,6	2,6	2,6	5,1	9,6	5,8	28,5	29,3	29,2
1999	4,3	17,4	6,0	2,5	2,5	2,5	4,8	8,1	5,1	28,3	25,4	25,9
2000	6,0	25,3	9,1	3,0	3,3	3,0	4,7	14,5	5,4	27,8	25,9	26,1
2001	4,7	30,2	10,1	2,6	3,9	2,7	3,7	17,4	4,4	26,6	26,4	26,5
2002	3,8	34,5	7,5	2,4	3,3	2,4	3,8	27,5	4,3	26,8	27,8	27,8
2003	5,8	35,1	12,5	3,0	4,1	3,1	4,5	28,6	6,4	25,3	27,3	27,3

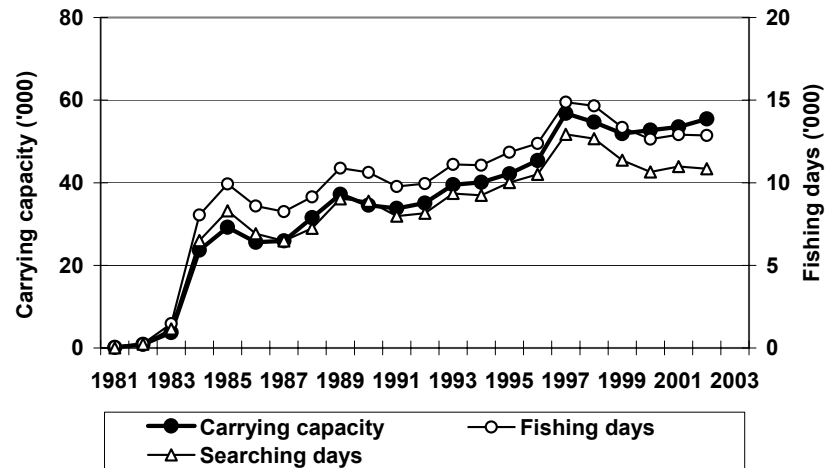
1 a – Purse seiners number according to their GRT category



1 b – Number of one degree squares visited



1 c – Carrying capacity, fishing and searching days



1 d – Number of sets (log and free) and percentage null ones

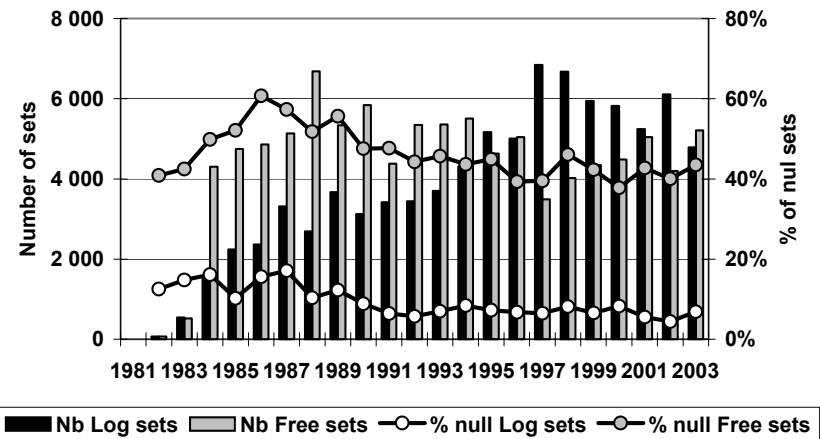
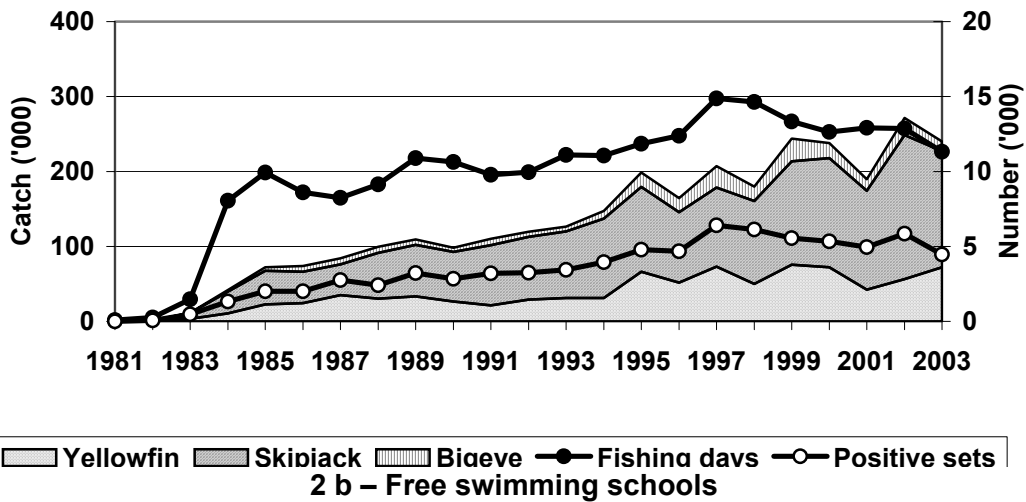
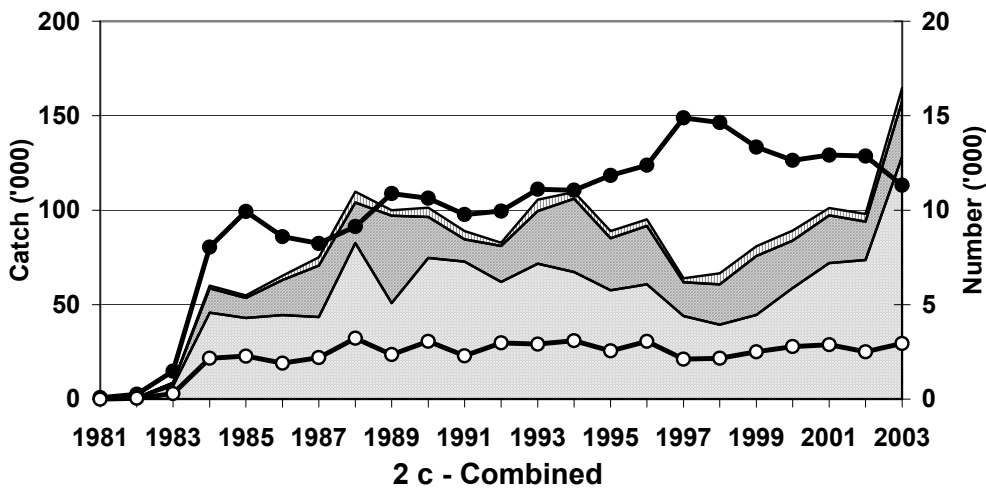


Figure 1: Fishing effort of the European and associated fleet : Purse seiners number by GRT category (1 a); Number of one degree squares visited for different levels of effort (1 b); Carrying capacity, fishing and searching days (1 c); Number of sets and percentage of null sets for both log and free schools (1 d)

2 a – Log schools



2 b – Free swimming schools



2 c - Combined

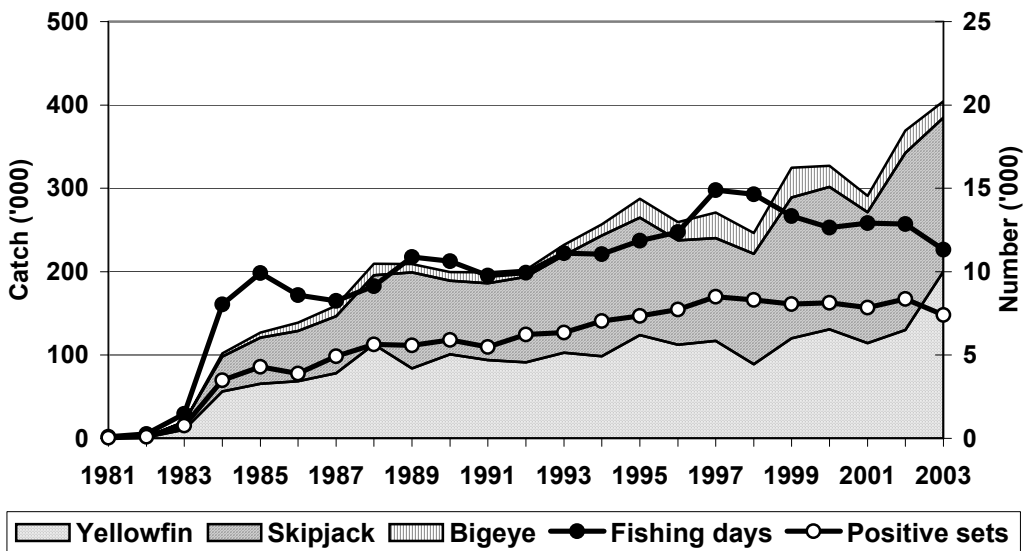


Figure 2 : Catches by species and fishing effort according to the fishing mode

3 a – Log schools



3 b – Free swimming schools



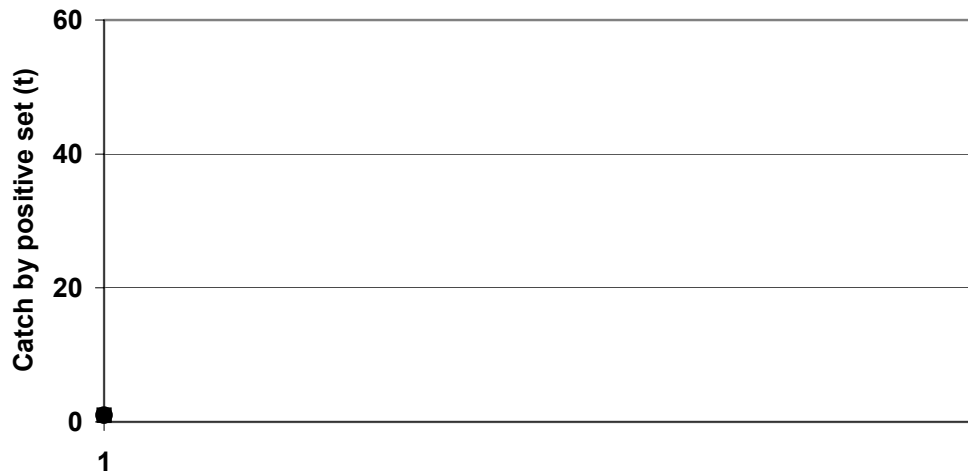
3 c - Combined



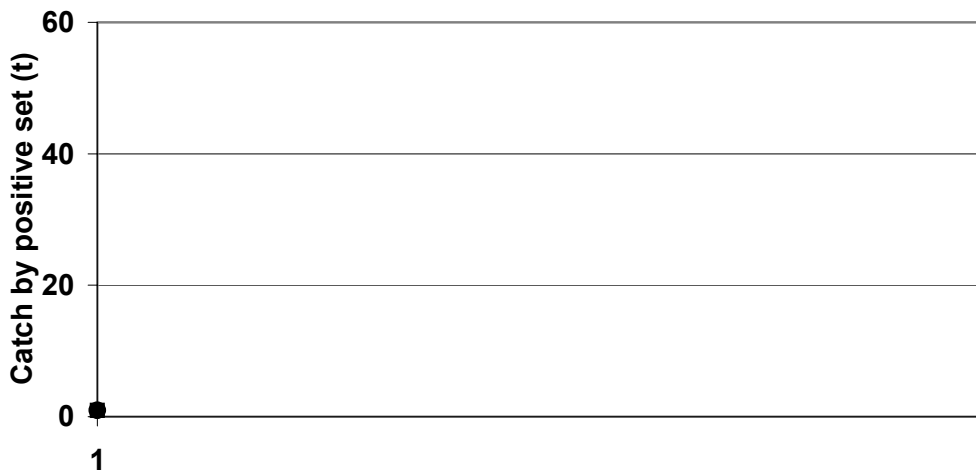
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Figure 3 : Catches per unit of effort (tons by fishing day) according to the fishing mode

4 a – Log schools



4 b – Free swimming schools



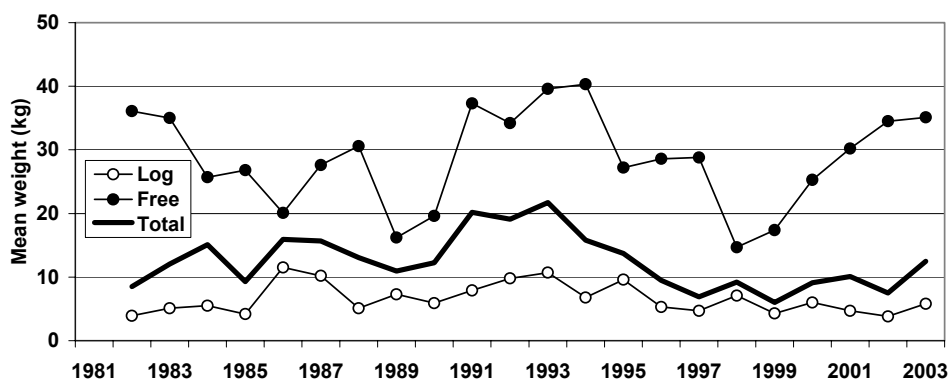
4 c - Combined



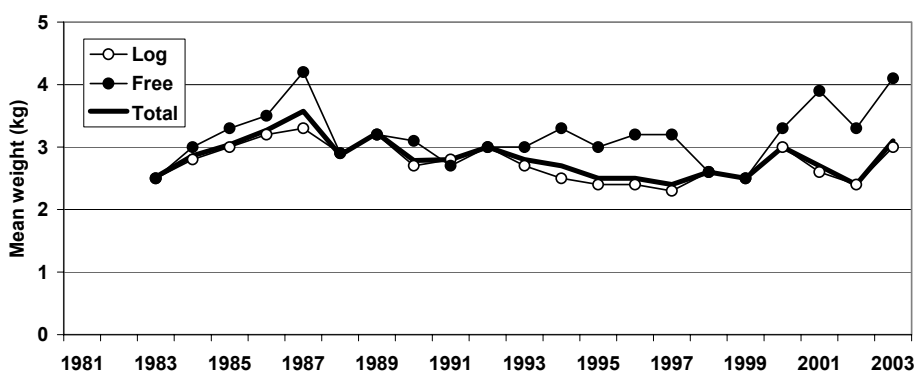
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Figure 4 : Catches per unit of effort (tons by positive set) according to the fishing mode

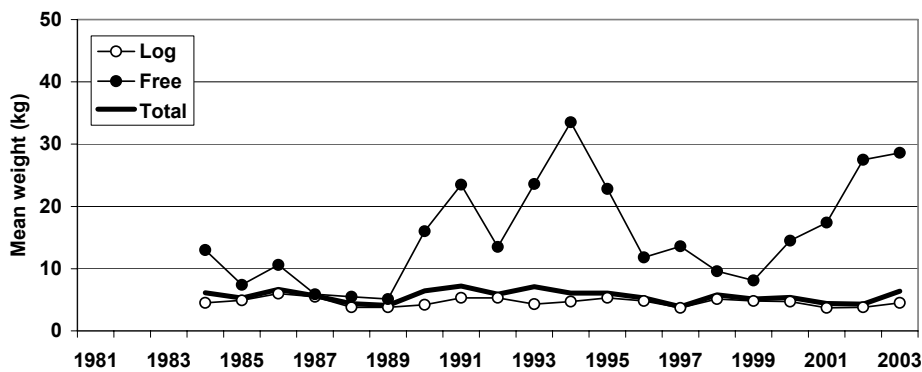
Yellowfin



Skipjack



Bigeye



Albacore

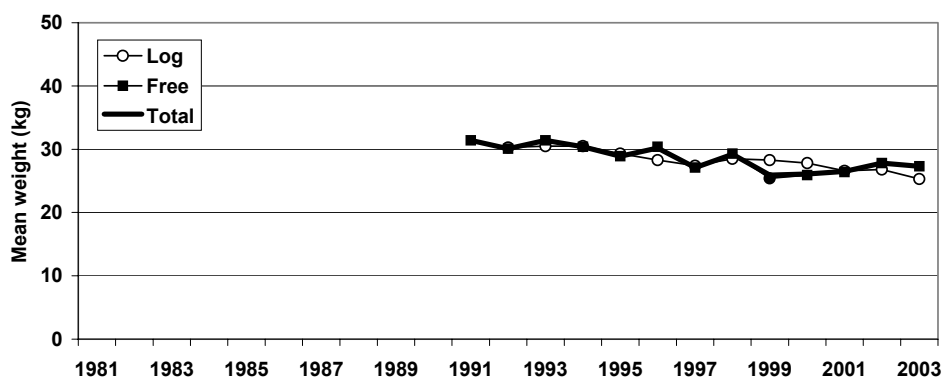


Figure 5 : Mean weights of catches by species and fishing mode

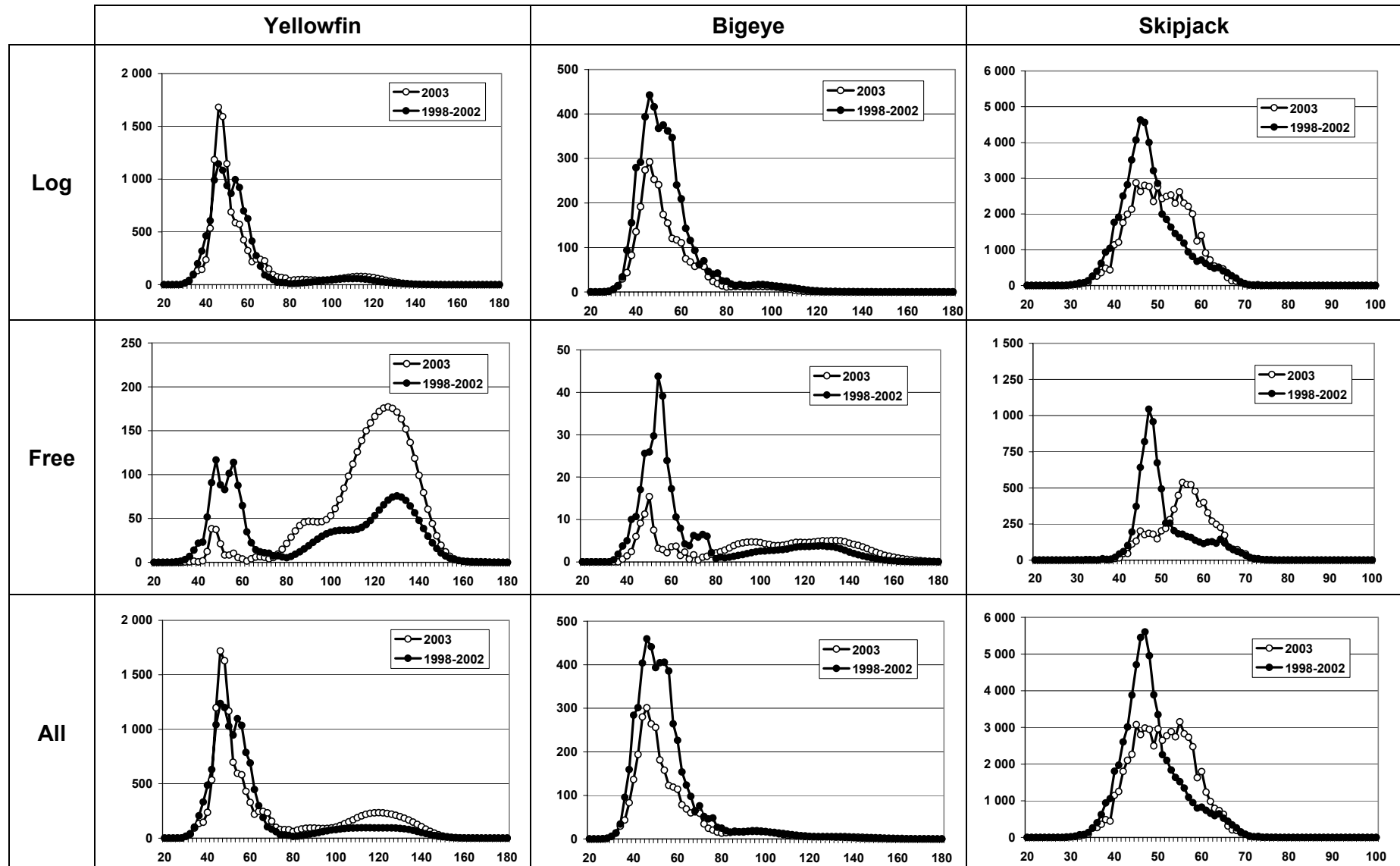


Figure 6a: Size distribution (in numbers) of the main purse seine fleets catches by species in 2003 and for the average 1998-2002 period

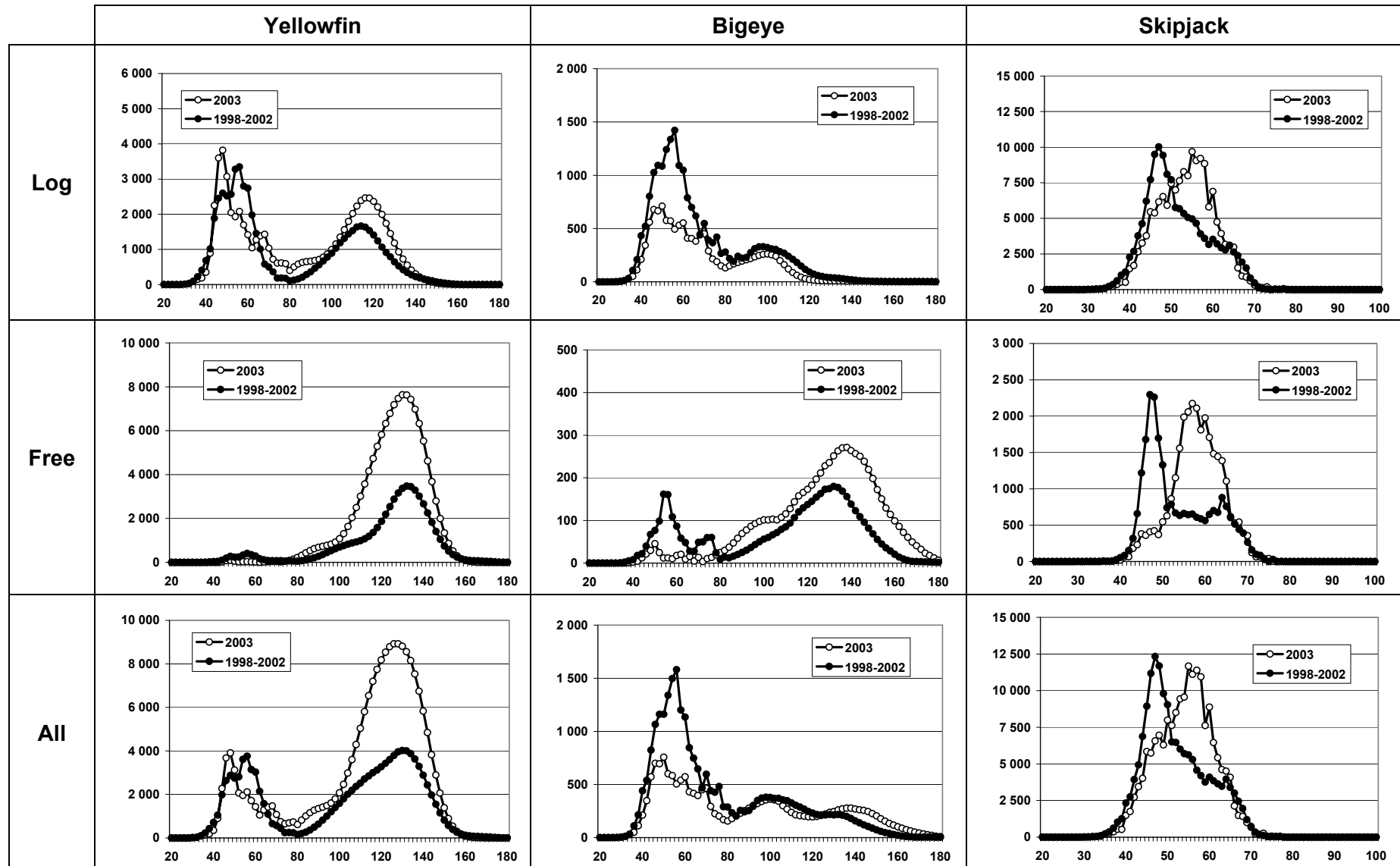
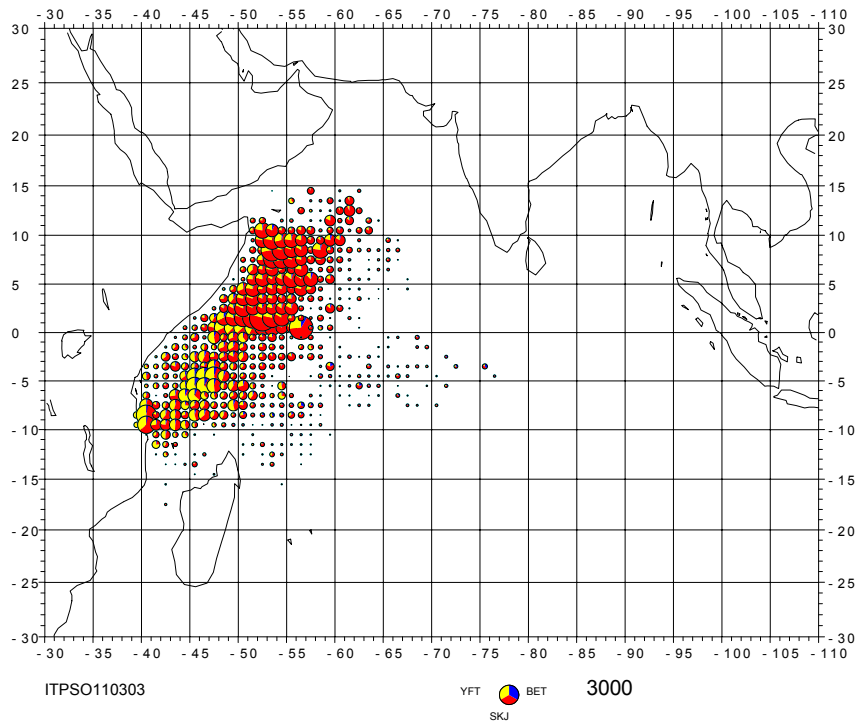


Figure 6b: Size distribution (in weight) of the main purse seine fleets catches by species in 2003 and for the average 1998-2002 period

Log schools, 2003



Log schools, 2003

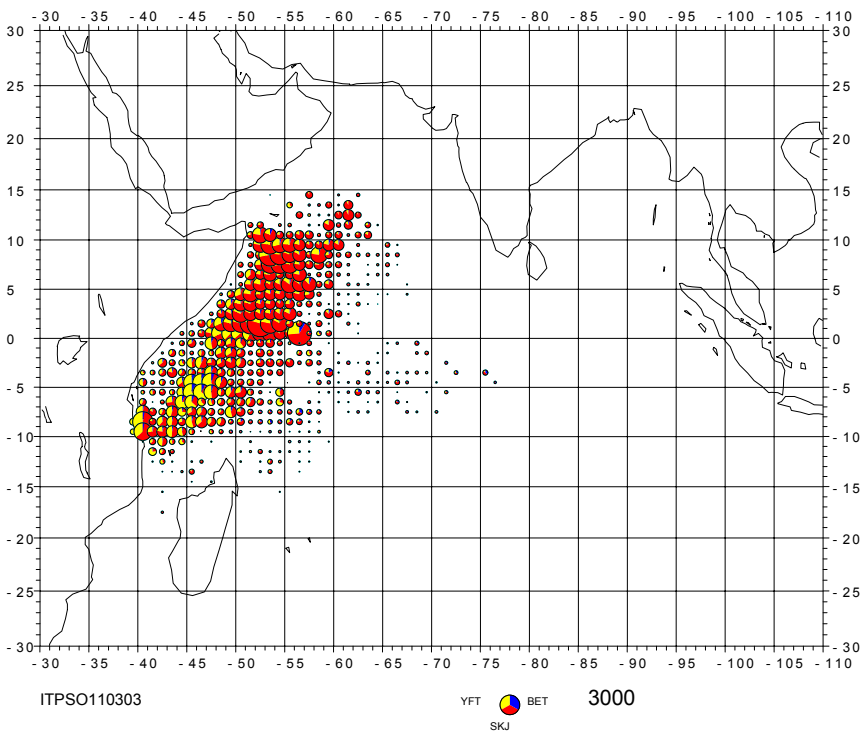
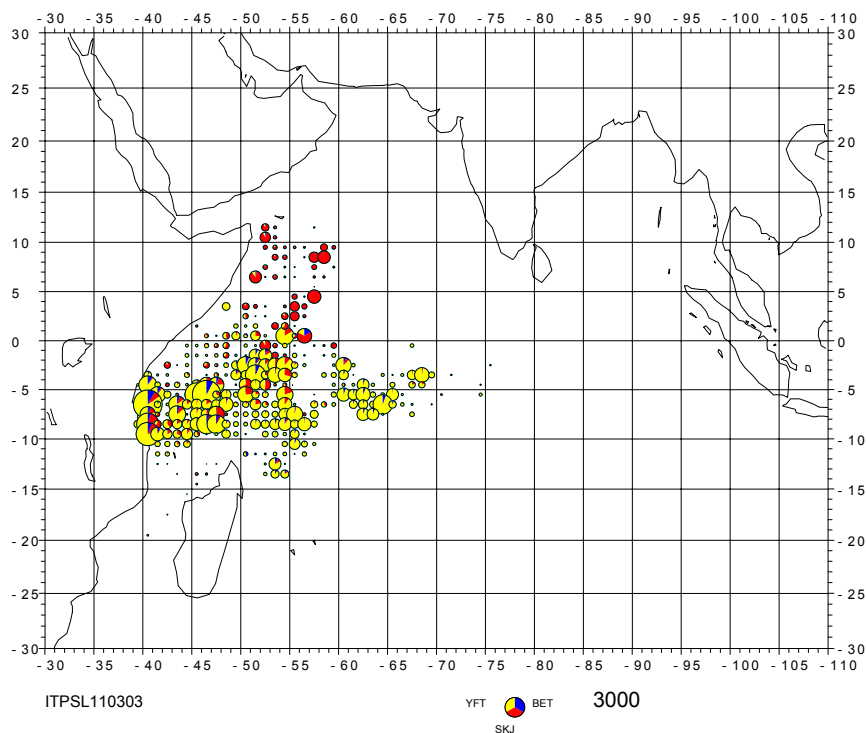


Figure 6a: Spatial distribution of the main purse seine fleets fleet catches on log schools in 2003 and for the average situation over the period 1998-2002

Free swimming schools, 2003



Free swimming schools, 1998-2002

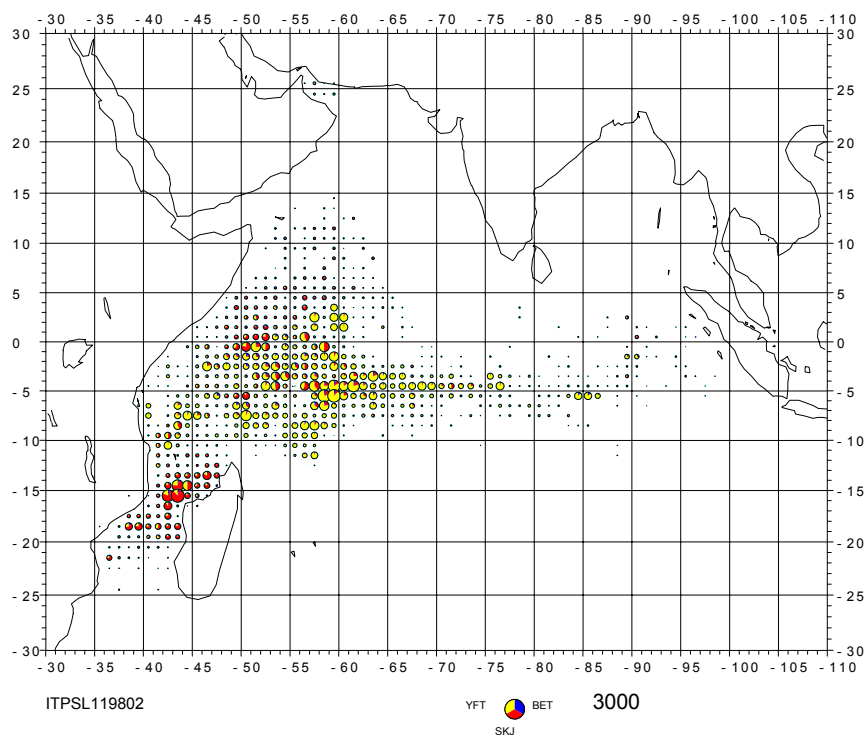
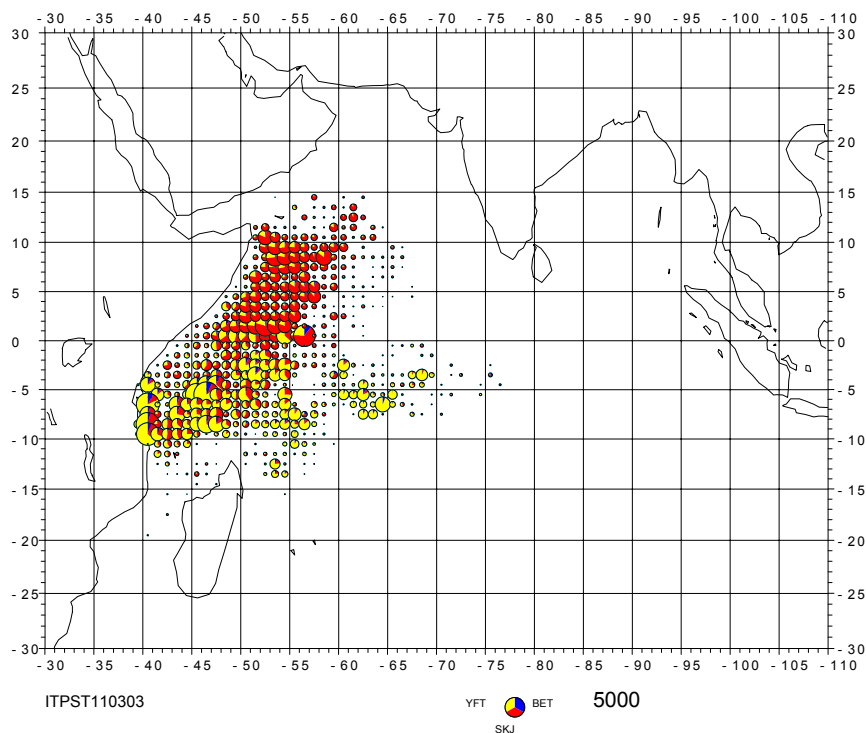


Figure 6b: Spatial distribution of the main purse seine fleets fleet catches on free swimming schools in 2003 and for the average situation over the period 1998-2002

Total catches, 2003



Total catches, 1998-2002

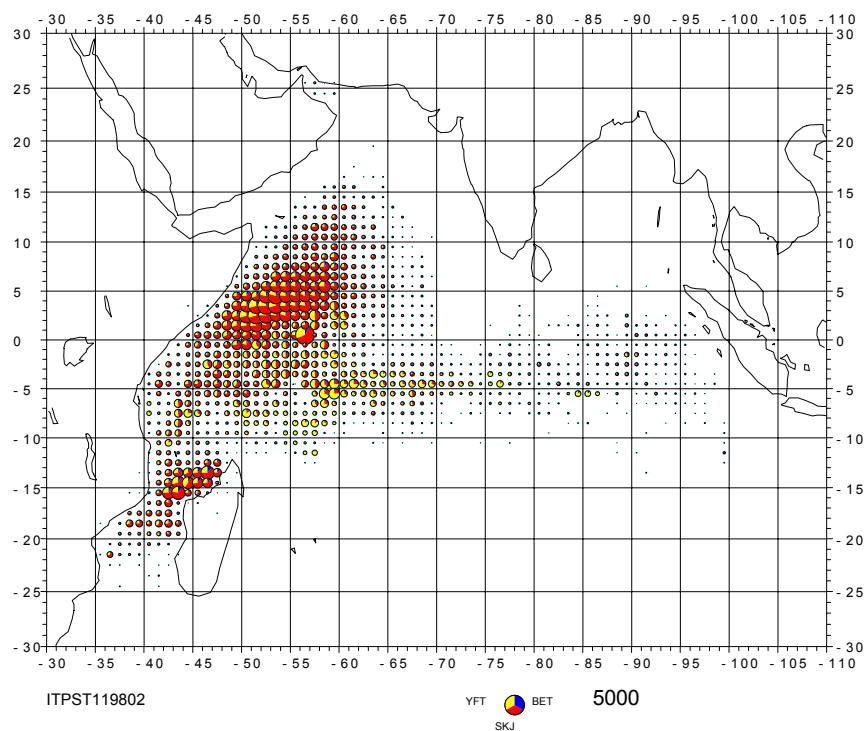
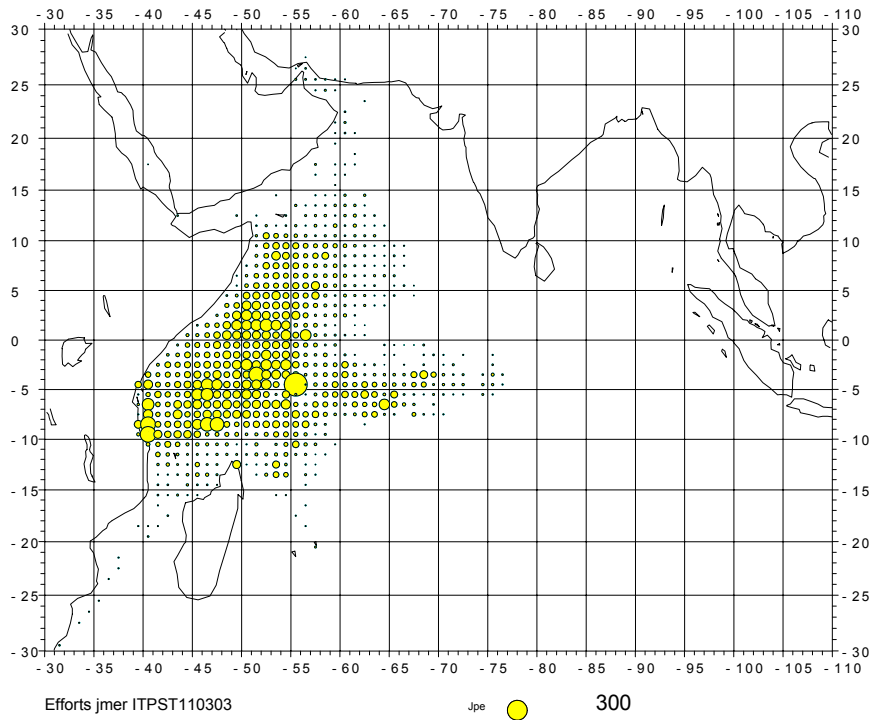


Figure 7a: Spatial distribution of the main purse seine fleets fleet total catches in 2003 and for the average situation over the period 1998-2002

Effort, 2003



Effort, 1998-2002

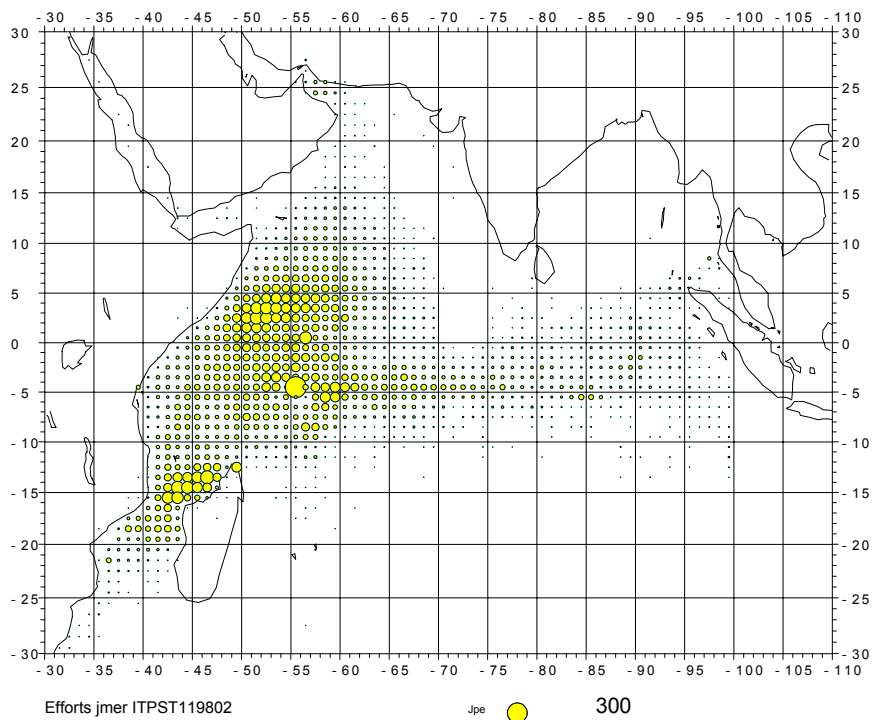


Figure 7b: Spatial distribution of the main purse seine fleets fleet total effort (fishing days) in 2003 and for the average situation over the period 1998-2002