

STATISTICS OF THE MAIN PURSE SEINE FLEETS FISHING IN THE INDIAN OCEAN (1981-2000)

by

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ABSTRACT

This document contains summary statistics of French, Spanish, Seychelles and EU related NEI purse seine fleets fishing in the Indian Ocean.

Table 1. All Purse seiners by category and carrying capacity in tons, 1981 - 2000.

Class	4	5	6	7	8	9	total	C.Capacity	Supplies	V.A.S.*
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	3729		
1984	1	14	8	19	5	0	47	23642		
1985	1	13	8	19	7	0	48	29209		
1986	0	9	7	16	3	0	35	25562		
1987	1	6	7	15	6	0	35	25942		
1988	1	6	7	18	8	0	40	31550		
1989	1	6	8	20	9	0	44	37204		
1990	0	7	8	20	11	0	46	34525		
1991	0	4	6	20	9	0	39	33781	ND	ND
1992	0	4	3	21	11	0	39	35061	ND	ND
1993	0	4	3	21	13	1	42	39521	ND	ND
1994	0	4	4	20	13	1	42	40113	ND	ND
1995	0	4	4	20	13	1	42	42153	ND	ND
1996	0	3	5	21	17	1	47	45384	ND	ND
1997	0	3	4	23	27	1	58	56796	ND	ND
1998	0	3	5	20	25	0	53	54669	ND	ND
1999	0	2	5	20	25	0	52	51875	10	10
2000	1	1	4	19	23	2	50	53097	11	13

Class:

4	50-400 tons	7	801-1200 tons
5	401-600 tons	8	1201-2000 tons

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6 601-800 tons 9 > 2000 tons

* Vessel associated with supply

Table 2. ALL purse seiners total catch by species in the Indian Ocean, 1981 -2000.

TOTAL CATCH BY SPECIES					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	199	163	10	0	372
1982	1028	1027	8	0	2063
1983	10505	9366	218	0	20089
1984	56456	41884	3561	558	102459
1985	65772	55266	6160	726	127924
1986	68610	60483	9951	179	139223
1987	78335	68292	12682	239	159548
1988	112780	82822	13812	266	209680
1989	84058	115181	9997	6	209242
1990	101070	87932	10489	317	199808
1991	94077	92016	12972	2243	201347
1992	91050	102706	8312	3256	205324
1993	102587	117102	12340	1289	233319
1994	98607	144548	13728	2574	259457
1995	123691	140988	22881	1254	288814
1996	112488	125038	21728	1526	262066
1997	116756	123705	30576	1961	273205
1998	89213	132106	24893	1376	247588
1999	119992	169101	35625	542	326088
2000	133245	168435	25584	1162	331204

Table 3. ALL purse seiners catch on log by species in the Indian Ocean, 1981 -2000.

CATCH ON LOGS BY SPECIES					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	62	123	10	0	195
1982	391	912	8	0	1311
1983	3444	7715	212	0	11371
1984	10673	29062	2102	7	41844
1985	22836	44617	4793	20	72266
1986	24213	41851	7642	0	73706
1987	34862	41002	8318	4	84186
1988	30161	61375	8079	0	99615
1989	33298	68931	6943	0	109172
1990	26367	66223	5558	157	98305
1991	21313	80249	8644	55	110286
1992	29069	83533	6799	15	119416
1993	30914	89203	6449	10	126575
1994	31247	105883	10075	90	147296
1995	66388	113114	19113	53	198668
1996	51830	93913	18415	97	164255
1997	72826	105723	28413	196	207158
1998	49753	110799	18968	138	179658
1999	75446	137928	30431	108	243929
2000	73607	143062	20554	123	238371

Table 4. ALL purse seiners catches on free schools by species in the Indian Ocean, 1981 -2000.

CATCH ON FREE SCHOOL BY SPECIES					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	137	40	0	0	177
1982	637	115	0	0	752
1983	7061	1651	6	0	8718
1984	45783	12822	1459	551	60615
1985	42936	10649	1367	706	55658
1986	44397	18632	2309	179	65517
1987	43473	27290	4364	235	75362
1988	82619	21447	5733	266	110065
1989	50760	46250	3054	6	100070
1990	74703	21709	4931	160	101503
1991	72764	11767	4328	2189	91061
1992	61981	19174	1512	3241	85908
1993	71674	27899	5891	1279	106743
1994	67360	38664	3654	2483	112161
1995	57303	27874	3767	1202	90146
1996	60658	31125	3313	1429	97811
1997	43930	17982	2163	1765	66047
1998	39460	21307	5925	1238	67930
1999	44546	31173	5194	433	82159
2000	59638	25373	5030	1039	92833

Table 5. All purse seiners catches and efforts for area F57.

CATCH AND EFFORT PS ALL DATA AREA: FAO 57							
YEAR	YFT	SKJ	BET	ALB	TOTAL	F.DAYS	P.SETS
1981	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0
1984	1	2	0	0	3	34	1
1985	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0
1991	0	0	0	0	0	1	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0
1996	58	228	49	0	336	40	11
1997	1990	1267	298	0	3554	120	78
1998	13533	12298	6737	7	32574	2152	1020
1999	554	757	197	0	1508	120	42
2000	112	200	44	0	356	48	21

Table 6. All purse seiners catches and efforts for area F51.

CATCH AND EFFORT PS ALL DATA AREA: FAO 51							
YEAR	YFT	SKJ	BET	ALB	TOTAL	F.DAYS	P.SETS
1981	199	163	10	0	372	87	33
1982	1028	1027	8	0	2063	263	105
1983	10505	9366	218	0	20089	1475	766
1984	56456	41884	3561	558	102459	8065	2889
1985	65772	55266	6160	726	127924	9964	2892
1986	68610	60483	9951	179	139223	8615	2671
1987	78335	68292	12682	239	159548	8283	3031
1988	112780	82822	13812	266	209680	9183	3177
1989	84058	115181	9997	6	209242	10917	2550
1990	101070	87932	10489	317	199808	10659	3035
1991	94077	92016	12972	2243	201347	9766	5493
1992	91050	102706	8312	3256	205324	9944	6227
1993	102587	117102	12340	1289	233319	11109	6350
1994	98607	144548	13728	2574	259457	11061	7051
1995	123691	140988	22881	1254	288814	11848	7343
1996	112430	124809	21679	1526	261730	12340	7722
1997	114766	122438	30278	1961	269651	14763	8431
1998	75680	119808	18156	1369	215014	12496	7280
1999	119438	168344	35427	542	324580	13218	8020
2000	133133	168235	25540	1162	330849	13334	8114

Table 7. Nominal fishing effort (fishing days, searching days) of all purse seine fleet (1991 – 2000).

YEAR	F.DAYS	S.DAYS
1981	84	0
1982	256	221
1983	1461	1142
1984	8041	6502
1985	9929	8302
1986	8597	6907
1987	8246	6484
1988	9135	7244
1989	10880	9030
1990	10628	8880
1991	9767	7985
1992	9944	8162
1993	11109	9342
1994	11061	9228
1995	11848	10004
1996	12380	10510
1997	14883	12930
1998	14648	12667
1999	13339	11363
2000	13382	11404

Table 8. Number of 1x1 degree squares explored by all purse seine fleet. The same considering different minimum effort limits and number of 1x1 degree squares with sets and with catch.

YEAR	N. CWP	N. CWP with SET	N. CWP with CATCH	N. CWP Eff >12hrs	N. CWP Eff >60hrs
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	1007	785	773	823	547
1999	810	643	628	640	424
2000	821	592	572	612	395

Table 9. Total number of sets, positive sets and nul sets for all purse seine fleet. Same statistics by fishing mode.

	ALL				LOGS		SCHOOL		
YEAR	N° SETS	N° SETS +	N° SETS --	N° SETS	N° SETS +	N° SETS –	N° SETS	N° SETS +	N° SETS --
1981	43	33	10	0	0	0	0	0	0
1982	143	105	38	72	63	9	71	42	29
1983	1068	766	302	548	467	81	520	299	221
1984	5894	3491	2403	1588	1332	256	4306	2159	2147
1985	6993	4289	2704	2245	2015	230	4748	2274	2474
1986	7221	3904	3317	2366	1996	370	4855	1908	2947
1987	8446	4940	3506	3315	2749	566	5131	2191	2940
1988	9377	5638	3739	2693	2415	278	6684	3223	3461
1989	9013	5590	3423	3672	3222	450	5341	2368	2973
1990	8967	5911	3056	3123	2846	277	5844	3065	2779
1991	7803	5493	2310	3419	3199	220	4384	2294	2090
1992	8793	6227	2566	3444	3246	198	5349	2981	2368
1993	9059	6350	2709	3701	3441	260	5358	2909	2449
1994	9817	7051	2766	4313	3949	364	5504	3102	2402
1995	9799	7343	2456	5164	4790	374	4635	2553	2082
1996	10053	7733	2320	5007	4670	337	5046	3063	1983
1997	10334	8509	1825	6842	6398	444	3492	2111	1381
1998	10698	8300	2398	6676	6130	546	4022	2170	1852
1999	10286	8062	2224	5945	5557	388	4341	2505	1836
2000	10311	8135	2176	5815	5333	482	4496	2802	1694

Table 10. Frequency of positive sets by size of catch.

TOTAL SET FREQUENCY BY CATCH											
YEAR	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.
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	914	1074	907	662	500	331	264	165	141	130	399
1992	1092	1329	1038	747	548	362	276	185	138	110	402
1993	1014	1306	983	711	542	399	281	240	176	146	551
1994	1051	1482	1165	795	558	444	321	237	199	145	649
1995	1097	1437	1194	829	659	429	343	276	217	176	686
1996	1381	1778	1263	914	611	431	301	246	211	138	459
1997	1688	2017	1387	1021	671	447	310	259	139	126	438
1998	1766	2101	1444	945	574	399	252	222	133	87	376
1999	1302	1624	1246	888	649	474	432	307	219	156	763
2000	1319	1733	1239	860	630	505	335	310	236	150	815

Table 11. Frequency of positive sets in FADs by size of catch.

SET FREQUENCY BY CATCH. FADs											
YEAR	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 .
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	493	671	572	411	294	200	142	89	84	63	176
1992	504	698	533	385	288	194	156	96	82	64	246
1993	527	753	543	397	296	227	152	132	97	68	249
1994	505	858	683	508	356	240	171	127	105	71	323
1995	653	927	781	568	438	272	238	181	140	123	469
1996	782	1059	773	573	368	275	194	161	121	93	271
1997	1249	1532	1046	789	495	333	228	190	109	102	321
1998	1289	1578	1095	719	408	298	178	164	97	57	247
1999	743	1047	844	641	463	364	337	236	159	118	604
2000	730	1061	822	593	420	334	239	220	181	109	622

Table 12. Frequency of positive sets in free schools by size of catch.

SET FREQUENCY BY CATCH. FREE SCHOOL											
YEAR	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 .
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	421	403	335	251	206	131	122	76	57	67	223
1992	588	631	505	362	260	168	120	89	56	46	156
1993	487	553	440	314	246	172	129	108	79	78	302
1994	546	624	482	287	202	204	150	110	94	74	326
1995	444	510	413	261	221	157	105	95	77	53	217
1996	599	719	490	341	243	156	107	85	90	45	188
1997	439	485	341	232	176	114	82	69	30	24	117
1998	477	523	349	226	166	101	74	58	36	30	129
1999	559	577	402	247	186	110	95	71	60	38	159
2000	589	672	417	267	210	171	96	90	55	41	193

Table 13. Catch rate (catch/fishing day) by species and total.

NOMINAL CATCH RATE (F.DAYS) ALL					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	2.29	1.87	0.11	0.00	4.28
1982	3.91	3.90	0.03	0.00	7.84
1983	7.12	6.35	0.15	0.00	13.62
1984	7.00	5.19	0.44	0.07	12.71
1985	6.60	5.55	0.62	0.07	12.84
1986	7.96	7.02	1.16	0.02	16.16
1987	9.46	8.24	1.53	0.03	19.26
1988	12.28	9.02	1.50	0.03	22.83
1989	7.70	10.55	0.92	0.00	19.17
1990	9.48	8.25	0.98	0.03	18.75
1991	9.63	9.42	1.33	0.23	20.61
1992	9.16	10.33	0.84	0.33	20.65
1993	9.24	10.54	1.11	0.12	21.00
1994	8.91	13.07	1.24	0.23	23.46
1995	10.44	11.90	1.93	0.11	24.38
1996	9.09	10.10	1.76	0.12	21.17
1997	7.84	8.31	2.05	0.13	18.36
1998	6.09	9.02	1.70	0.09	16.90
1999	9.00	12.68	2.67	0.04	24.45
2000	9.96	12.59	1.91	0.09	24.75

Table 14. Catch rate (catch/positive set) by species and total.

NOMINAL CATCH RATE (N° POSITIVES SETS) ALL					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	6.03	4.94	0.30	0.00	11.27
1982	9.79	9.78	0.08	0.00	19.65
1983	13.71	12.23	0.28	0.00	26.23
1984	16.17	12.00	1.02	0.16	29.35
1985	15.34	12.89	1.44	0.17	29.83
1986	17.57	15.49	2.55	0.05	35.66
1987	15.86	13.82	2.57	0.05	32.30
1988	20.00	14.69	2.45	0.05	37.19
1989	15.04	20.60	1.79	0.00	37.43
1990	17.10	14.88	1.77	0.05	33.80
1991	17.13	16.75	2.36	0.41	36.66
1992	14.62	16.49	1.33	0.52	32.97
1993	16.16	18.44	1.94	0.20	36.74
1994	13.98	20.50	1.95	0.36	36.80
1995	16.84	19.20	3.12	0.17	39.33
1996	14.55	16.17	2.81	0.20	33.89
1997	13.72	14.54	3.59	0.23	32.11
1998	10.75	15.92	3.00	0.17	29.83
1999	14.88	20.98	4.42	0.07	40.45
2000	16.38	20.70	3.14	0.14	40.71

Table 15. Catch rate (catch/fishing day) in FAD by species and total.

NOMINAL CATCH RATE (F.DAYS) FADS					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	0.71	1.41	0.11	0.00	2.24
1982	1.49	3.47	0.03	0.00	4.98
1983	2.33	5.23	0.14	0.00	7.71
1984	1.32	3.60	0.26	0.00	5.19
1985	2.29	4.48	0.48	0.00	7.25
1986	2.81	4.86	0.89	0.00	8.56
1987	4.21	4.95	1.00	0.00	10.16
1988	3.28	6.68	0.88	0.00	10.85
1989	3.05	6.31	0.64	0.00	10.00
1990	2.47	6.21	0.52	0.01	9.22
1991	2.18	8.22	0.88	0.01	11.29
1992	2.92	8.40	0.68	0.00	12.01
1993	2.78	8.03	0.58	0.00	11.39
1994	2.82	9.57	0.91	0.01	13.32
1995	5.60	9.55	1.61	0.00	16.77
1996	4.19	7.59	1.49	0.01	13.27
1997	4.89	7.10	1.91	0.01	13.92
1998	3.40	7.56	1.29	0.01	12.27
1999	5.66	10.34	2.28	0.01	18.29
2000	5.50	10.69	1.54	0.01	17.81

Table 16. Catch rate (catch/positives sets) in FADs by species and total.

NOMINAL CATCH RATE (N° POSITIVES SETS) FADS					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	3.10	6.15	0.50	0.00	9.75
1982	6.21	14.48	0.13	0.00	20.81
1983	7.37	16.52	0.45	0.00	24.35
1984	8.01	21.82	1.58	0.01	31.41
1985	11.33	22.14	2.38	0.01	35.86
1986	12.13	20.97	3.83	0.00	36.93
1987	12.68	14.92	3.03	0.00	30.62
1988	12.49	25.41	3.35	0.00	41.25
1989	10.33	21.39	2.15	0.00	33.88
1990	9.26	23.27	1.95	0.06	34.54
1991	6.66	25.09	2.70	0.02	34.48
1992	8.96	25.73	2.09	0.00	36.79
1993	8.98	25.92	1.87	0.00	36.78
1994	7.91	26.81	2.55	0.02	37.30
1995	13.86	23.61	3.99	0.01	41.48
1996	11.10	20.11	3.94	0.02	35.17
1997	11.38	16.52	4.44	0.03	32.38
1998	8.12	18.07	3.09	0.02	29.31
1999	13.58	24.82	5.48	0.02	43.90
2000	13.80	26.83	3.85	0.02	44.70

Table 17. Catch rate (catch/fishing day) in free school by species and total

NOMINAL CATCH RATE (F.DAYS) F.SCHOOL					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	1.57	0.46	0.00	0.00	2.03
1982	2.42	0.44	0.00	0.00	2.86
1983	4.79	1.12	0.00	0.00	5.91
1984	5.68	1.59	0.18	0.07	7.52
1985	4.31	1.07	0.14	0.07	5.59
1986	5.15	2.16	0.27	0.02	7.60
1987	5.25	3.29	0.53	0.03	9.10
1988	9.00	2.34	0.62	0.03	11.99
1989	4.65	4.24	0.28	0.00	9.17
1990	7.01	2.04	0.46	0.02	9.52
1991	7.45	1.20	0.44	0.22	9.32
1992	6.23	1.93	0.15	0.33	8.64
1993	6.45	2.51	0.53	0.12	9.61
1994	6.09	3.50	0.33	0.22	10.14
1995	4.84	2.35	0.32	0.10	7.61
1996	4.90	2.51	0.27	0.12	7.90
1997	2.95	1.21	0.15	0.12	4.44
1998	2.69	1.45	0.40	0.08	4.64
1999	3.34	2.34	0.39	0.03	6.16
2000	4.46	1.90	0.38	0.08	6.94

Table 18. Catch rate (catch/positives sets) in free school by species and total.

NOMINAL CATCH RATE (N° POSITIVES SETS) F.SCHOOL					
YEAR	YFT	SKJ	BET	ALB	TOTAL
1981	10.54	3.08	0.00	0.00	13.62
1982	15.17	2.74	0.00	0.00	17.90
1983	23.62	5.52	0.02	0.00	29.16
1984	21.21	5.94	0.68	0.26	28.08
1985	18.88	4.68	0.60	0.31	24.48
1986	23.27	9.77	1.21	0.09	34.34
1987	19.84	12.46	1.99	0.11	34.40
1988	25.63	6.65	1.78	0.08	34.15
1989	21.44	19.53	1.29	0.00	42.26
1990	24.37	7.08	1.61	0.05	33.12
1991	31.72	5.13	1.89	0.95	39.70
1992	20.79	6.43	0.51	1.09	28.82
1993	24.64	9.59	2.03	0.44	36.69
1994	21.71	12.46	1.18	0.80	36.16
1995	22.45	10.92	1.48	0.47	35.31
1996	19.80	10.16	1.08	0.47	31.93
1997	20.81	8.52	1.02	0.84	31.29
1998	18.18	9.82	2.73	0.57	31.30
1999	17.78	12.44	2.07	0.17	32.80
2000	21.28	9.06	1.80	0.37	33.13

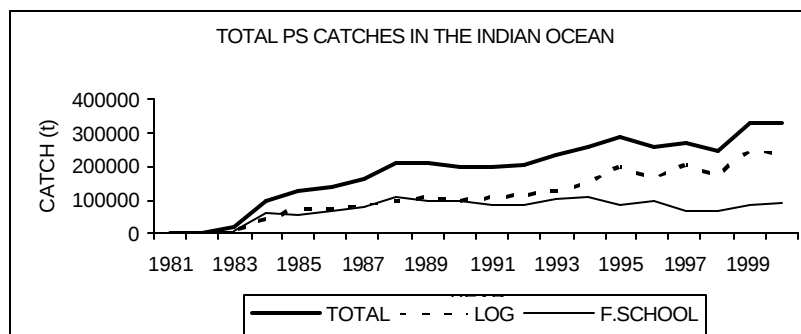


Figure 1. Total catch and catch by fishing mode (floating object and free school) of the purse seine fleet (1981 – 2000).

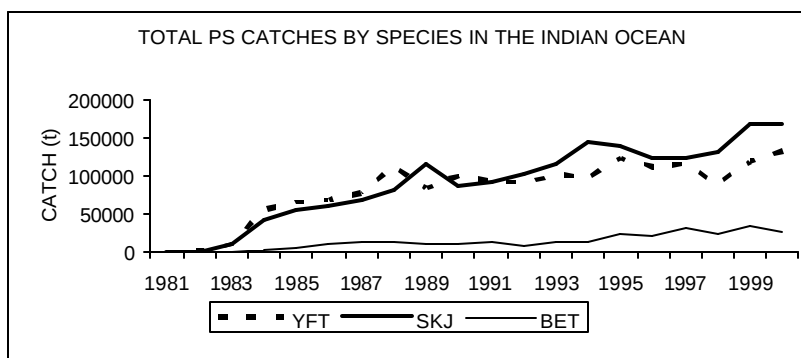


Figure 2. Catch by species of the purse seine fleet (1981 – 2000).

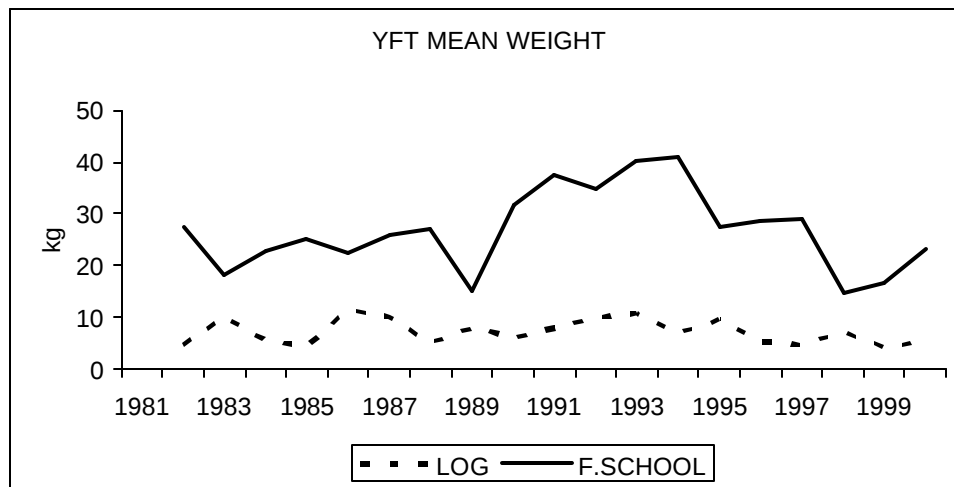


Figure 3. Average weight of yellowfin catch for the period 1981-2000

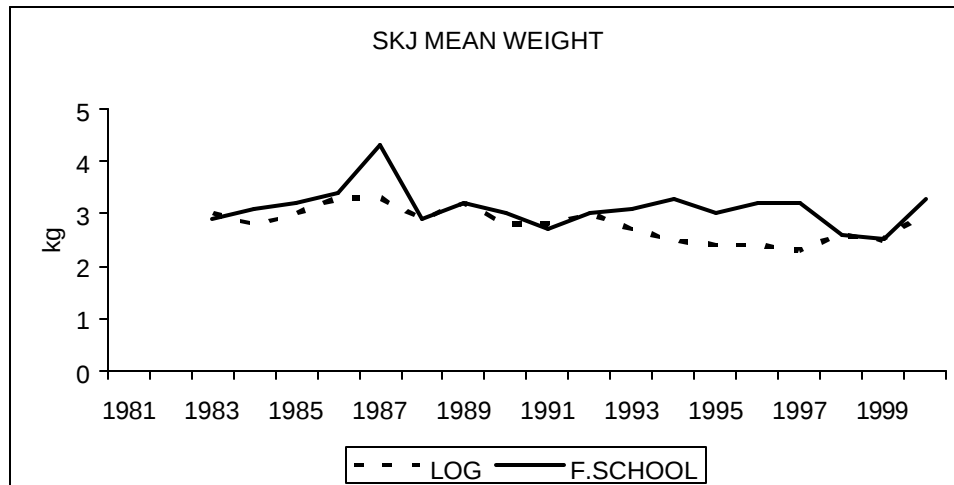


Figure 4. Average weight of skipjack catch for the period 1981-2000.

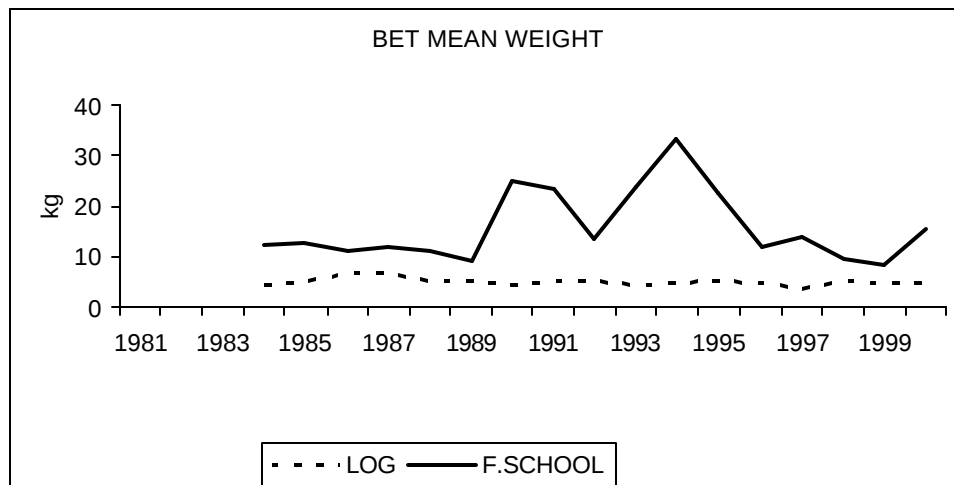


Figure 5. Average weight of bigeye catch for the period 1981-2000.

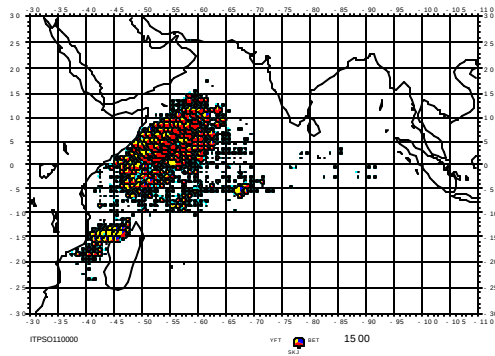


Figure 6.- Distribution of catches on logs by 1°x1° square in 2000.

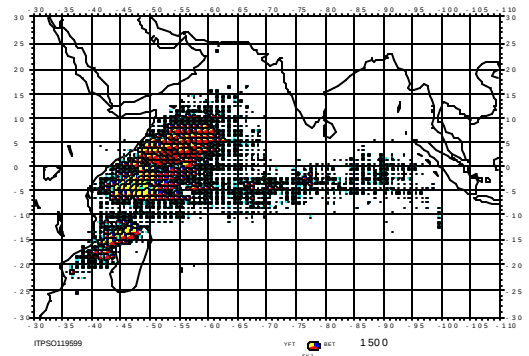


Figure 7.- Distribution of 1995-1999 average catches on logs by 1°x1° square.

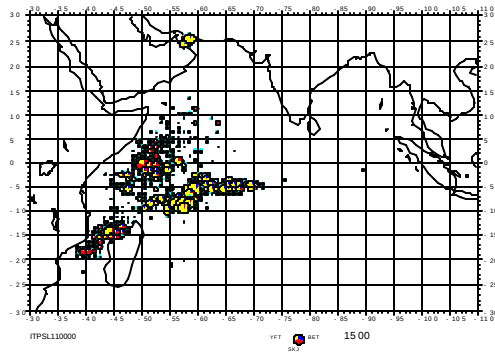


Figure 8.- Distribution of catches on free schools by 1°x1° square in 2000.

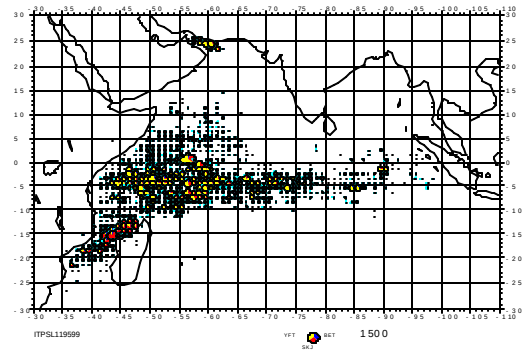


Figure 9.- Distribution of 1995-1999 average catches on free schools by 1°x1° square.

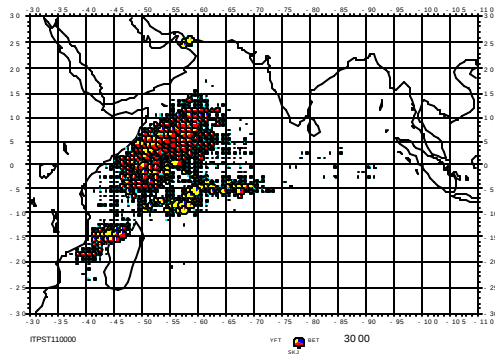


Figure 10.- Distribution of total catches by 1°x1° square in 2000.

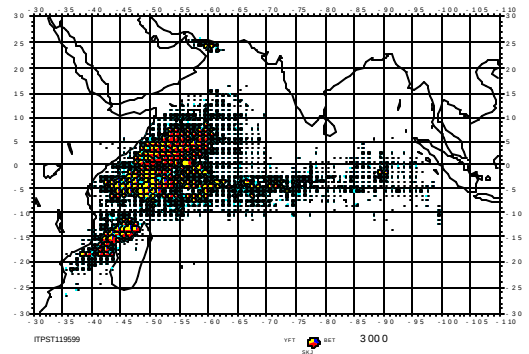


Figure 11.- Distribution of average total catches (1995-1999) by 1°x1° square.

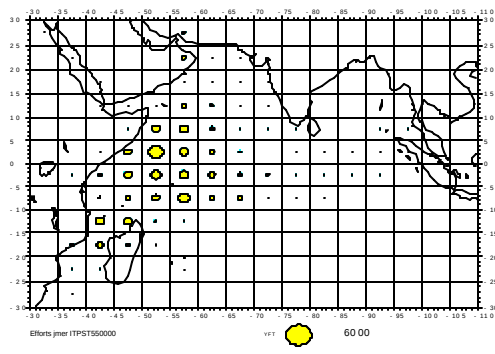


Figure 12.- Distribution of total effort by 5°x5° square.

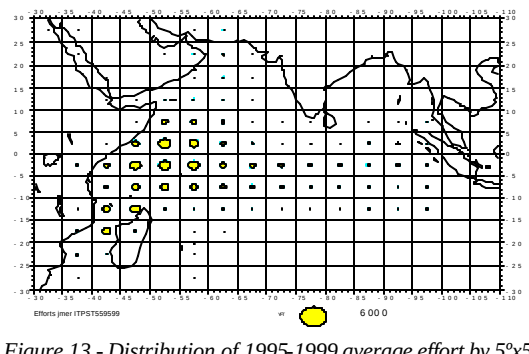


Figure 13.- Distribution of 1995-1999 average effort by 5°x5° square.

