



International Consultations on the Establishment of the South Pacific Regional Fisheries Management Organisation

Eighth International Meeting: Science Working Group

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Differences Between Mackerel (*Trachurus* species) Data Submitted to SPRFMO versus the FAO

Interim Secretariat

1. Introduction

On 14 August 2009, a Memorandum was sent to the Science and Data and Information Working Groups. It noted the Science Working Group (SWG) Chair had advised the Interim Secretariat of differences between the catches of jack mackerel reported to the Interim Secretariat, SPRFMO, and those reported to the FAO. The SWG Chair raised a concern that any data discrepancies could be an issue with regard to SPRFMO processes related to stock assessment.

2. Mackerel (*Trachurus* species) Catch Data Summaries

A spreadsheet of Chilean jack mackerel (*Trachurus murphyi*) catches extracted from the FAO FishStat database was circulated as an attachment to the original 14 August 09 Memorandum. An updated copy of that spreadsheet is presented in Table 1 for your information.

Table 2 displays catch information for mackerel caught and reported to the FAO as “Jack and horse mackerels nei” (*Trachurus* species). Table 3 displays catch information for mackerel caught and reported to the FAO as “Greenback horse mackerel (*T. declivis*)”. Table 3 is included as some participants have reported some mackerel catches as “greenback horse mackerel”.

3. Criteria Used for FAO Data Extraction

The data in all three tables were extracted from the FAO FishStat database on 29 September 2009.

These data were extracted using the following criteria:

- The year range selected was 1950 – 2007
- All possible countries were selected
- Only those countries for which any species data exist between 1950 – 2007 are displayed
- Potential FAO reporting areas of Eastern Indian Ocean (Area 57), Western Central Pacific (Area 71), Eastern Central Pacific (Area 77), Southwest Pacific (Area 81), and Southeast Pacific (Area 87) were selected; ***note that these FAO reporting areas include EEZ waters***

- 3 species groupings were selected: Chilean jack mackerel (*T. murphyi*), Jack and horse mackerels nei (*Trachurus* species), and Greenback horse mackerel (*T. declivis*).

4. Data Discrepancies

Discrepancies between FAO and SPRFMO mackerel catch totals by year do exist. Often these are small, but in some cases the differences are significant.

Some discrepancies between FAO and SPRFMO *Trachurus* species catch totals can be accounted for by differences in reporting areas. For example, FAO reporting areas include marine waters which fall within Exclusive Economic Zone (EEZ) boundaries of coastal countries. In contrast, some of SPRFMO's coastal country participants have submitted information on only the portion of their catch data which falls within High Seas areas, and not information on catches which fall within their EEZs. However, reporting area differences cannot account for discrepancies between SPRFMO and FAO *Trachurus* species catch totals where countries do not have their own EEZ waters within the SPRFMO Area.

5. Interim Secretariat: Next Steps

The Interim Secretariat has communicated with Luca Garibaldi (Fishery Statistician) of the FAO with regard to this issue. The two organisations plan to work together on a detailed comparison of the SPRFMO and FAO data sets in March – April 2010. Following this analysis, the Interim Secretariat will seek any additional data clarifications from participants as required.

Table 1 (Part 1 of 3): FAO Chilean Jack Mackerel (*Trachurus murphyi*) Catches (t) Between 1950 – 2007
 (All fish were recorded as caught in the FAO Area Pacific, Southeast - FAO87)

Land Area	Bulgaria	Chile	China	Cuba	Ecuador	Estonia	Georgia
2007	0	1,296,225	140,582	0	1,010	0	0
2006	0	1,379,941	160,000	0	0	0	0
2005	0	1,430,438	143,000	0	0	0	0
2004	0	1,451,599	131,020	0	0	0	0
2003	0	1,421,296	94,690	0	0	0	0
2002	0	1,518,994	76,261	0	604	0	0
2001	0	1,649,933	0	0	134,011	0	0
2000	0	1,234,299	0	0	7,144	0	0
1999	0	1,219,689	0	0	19,072	0	0
1998	0	1,612,912	0	0	25,900	0	0
1997	0	2,917,064	0	0	30,302	0	0
1996	0	3,883,326	0	0	56,781	0	0
1995	0	4,404,193	0	0	174,393	0	0
1994	0	4,041,447	0	0	23,723	0	0
1993	0	3,236,244	0	0	9,946	0	0
1992	0	3,212,060	0	3,196	22,818	376	0
1991	0	3,020,512	0	30,828	23,123	60,318	12,181
1990	1,649	2,471,875	0	41,197	138	78,627	36,130
1989	0	2,390,117	0	24,486	2,312	77,351	26,358
1988	0	2,138,255	0	44,209	0	82,590	23,134
1987	0	1,770,037	0	35,980	0	0	0
1986	0	1,184,317	0	46,833	0	0	0
1985	2,290	1,456,989	0	32,258	0	0	0
1984	14,694	1,426,301	0	34,008	10,000	0	0
1983	24,324	865,272	0	54,875	24,937	0	0
1982	13,561	1,494,683	0	83,881	0	0	0
1981	12,629	1,060,909	0	74,227	0	0	0
1980	15,065	562,262	0	83,971	0	0	0
1979	4,726	597,511	0	19,000	0	0	0
1978	0	586,681	0	1,000	0	0	0
1977	0	340,806	0	0	0	0	0
1976	0	342,269	0	900	0	0	0
1975	0	261,205	0	800	0	0	0
1974	0	193,512	0	0	0	0	0
1973	0	121,600	0	100	0	0	0
1972	0	86,000	0	0	0	0	0
1971	0	149,900	0	0	0	0	0
1970	0	104,000	0	0	0	0	0
1969	0	16,600	0	0	0	0	0
1968	0	23,800	0	0	0	0	0
1967	0	26,400	0	0	0	0	0
1966	0	17,600	0	0	0	0	0
1965	0	12,700	0	0	0	0	0
1964	0	10,300	0	0	0	0	0
1963	0	8,700	0	0	0	0	0
1962	0	9,000	0	0	0	0	0
1961	0	5,400	0	0	0	0	0
1960	0	6,200	0	0	0	0	0
1959	0	11,200	0	0	0	0	0
1958	0	5,600	0	0	0	0	0
1957	0	4,700	0	0	0	0	0
1956	0	1,400	0	0	0	0	0
1955	0	1,200	0	0	0	0	0
1954	0	2,000	0	0	0	0	0
1953	0	1,900	0	0	0	0	0
1952	0	1,300	0	0	0	0	0
1951	0	700	0	0	0	0	0
1950	0	1,000	0	0	0	0	0

Table 1 (Part 2 of 3): FAO Chilean Jack Mackerel (*T. murphyi*) Catches (t) Between 1950 – 2007

(All fish were recorded as caught in the FAO Area Pacific, Southeast - FAO87)

Land Area	Germany	Ghana	Japan	Korea, Republic of	Latvia	Lithuania
2007	0	0	0	11,138	0	33,433
2006	0	0	0	11,492	0	0
2005	0	0	0	9,444	0	0
2004	0	0	0	9,227	0	0
2003	0	0	0	2,196	0	0
2002	0	0	0	0	0	0
2001	0	1,157	0	0	0	0
2000	0	2,472	0	0	0	0
1999	0	0	7	0	0	0
1998	0	0	0	0	0	0
1997	0	0	0	0	0	0
1996	0	0	0	0	0	0
1995	0	0	0	0	0	0
1994	0	0	0	0	0	0
1993	0	0	0	0	0	0
1992	0	0	0	0	2,298	7,842
1991	0	0	0	0	83,719	109,292
1990	0	0	157	0	113,221	80,874
1989	0	0	701	0	128,692	102,980
1988	0	0	6,871	0	128,966	75,122
1987	0	0	8,815	2,018	0	0
1986	0	0	6,835	0	0	0
1985	0	0	5,229	641	0	0
1984	0	0	3,871	62	0	0
1983	0	0	1,694	0	0	0
1982	0	0	0	0	0	0
1981	0	0	29	0	0	0
1980	1,031	0	0	0	0	0
1979	0	0	120	0	0	0
1978	0	0	1,667	819	0	0
1977	0	0	2,273	0	0	0
1976	0	0	35	0	0	0
1975	0	0	0	0	0	0
1974	0	0	0	0	0	0
1973	0	0	0	0	0	0
1972	0	0	0	0	0	0
1971	0	0	0	0	0	0
1970	0	0	0	0	0	0
1969	0	0	0	0	0	0
1968	0	0	0	0	0	0
1967	0	0	0	0	0	0
1966	0	0	0	0	0	0
1965	0	0	0	0	0	0
1964	0	0	0	0	0	0
1963	0	0	0	0	0	0
1962	0	0	0	0	0	0
1961	0	0	0	0	0	0
1960	0	0	0	0	0	0
1959	0	0	0	0	0	0
1958	0	0	0	0	0	0
1957	0	0	0	0	0	0
1956	0	0	0	0	0	0
1955	0	0	0	0	0	0
1954	0	0	0	0	0	0
1953	0	0	0	0	0	0
1952	0	0	0	0	0	0
1951	0	0	0	0	0	0
1950	0	0	0	0	0	0

Table 1 (Part 3 of 3): FAO Chilean Jack Mackerel (*T. murphyi*) Catches (t) Between 1950 – 2007

(All fish were recorded as caught in the FAO Area Pacific, Southeast - FAO87)

Land Area	Nether-lands	Peru	Poland	Russian Fed-eration	Ukraine	Un. Sov. Soc. Rep.
2007	41,747	254,426	0	0	0	0
2006	0	277,568	0	0	0	0
2005	0	80,663	0	0	0	0
2004	0	187,369	0	0	0	0
2003	0	217,734	0	132	0	0
2002	0	154,219	0	0	0	0
2001	0	723,733	0	0	0	0
2000	0	296,579	0	0	0	0
1999	0	184,679	0	0	0	0
1998	0	386,946	0	0	0	0
1997	0	649,751	0	0	0	0
1996	0	438,736	0	0	0	0
1995	0	376,600	0	0	0	0
1994	0	196,771	0	0	0	0
1993	0	130,681	0	0	0	0
1992	0	96,660	0	31,357	2,736	0
1991	0	136,337	0	419,650	57,788	0
1990	0	191,139	0	688,551	124,894	0
1989	0	140,720	0	662,626	98,285	0
1988	0	118,076	0	498,214	130,262	0
1987	0	46,304	0	0	0	818,628
1986	0	49,863	0	0	0	673,049
1985	0	87,466	0	0	0	563,968
1984	0	184,333	80,129	0	0	570,612
1983	0	76,825	39,943	0	0	591,005
1982	0	50,013	7,136	0	0	555,367
1981	0	37,875	0	0	0	554,646
1980	0	123,380	528	0	0	494,402
1979	0	151,591	1,180	0	0	532,209
1978	0	386,793	0	0	0	49,220
1977	0	504,992	0	0	0	0
1976	0	54,154	0	0	0	0
1975	0	37,899	0	0	0	0
1974	0	129,211	0	0	0	0
1973	0	42,800	0	0	0	0
1972	0	18,800	0	0	0	5,500
1971	0	9,200	0	0	0	0
1970	0	4,700	0	0	0	0
1969	0	4,200	0	0	0	0
1968	0	2,800	0	0	0	0
1967	0	3,100	0	0	0	0
1966	0	4,300	0	0	0	0
1965	0	2,600	0	0	0	0
1964	0	1,700	0	0	0	0
1963	0	200	0	0	0	0
1962	0	700	0	0	0	0
1961	0	200	0	0	0	0
1960	0	300	0	0	0	0
1959	0	400	0	0	0	0
1958	0	200	0	0	0	0
1957	0	400	0	0	0	0
1956	0	700	0	0	0	0
1955	0	100	0	0	0	0
1954	0	100	0	0	0	0
1953	0	100	0	0	0	0
1952	0	100	0	0	0	0
1951	0	100	0	0	0	0
1950	0	0	0	0	0	0

Table 2: FAO “Jack and horse mackerels nei” (*Trachurus* species) Catches (t) Between 1950 – 2007

(All fish were recorded as caught in the FAO Area Pacific, Southwest - FAO81)

Land Area	Japan	Korea, Republic of	New Zealand	Norway
2007	0	386	46,355	0
2006	0	93	36,332	0
2005	0	96	45,709	0
2004	0	16	43,152	0
2003	209	261	37,661	0
2002	26	11	32,285	0
2001	545	307	28,507	0
2000	12	259	22,544	0
1999	11	2,182	34,003	0
1998	8	1,983	36,059	0
1997	28	2,087	34,057	1
1996	335	1,157	29,085	0
1995	4,111	474	31,919	0
1994	10,034	359	34,002	0
1993	14,044	1,260	34,838	3
1992	16,627	1,315	25,087	3
1991	13,944	293	21,363	0
1990	13,436	1,433	21,626	0
1989	13,111	837	18,388	0
1988	12,871	2,080	16,000	0
1987	6,913	3,468	13,000	0
1986	9,855	2,451	10,000	0
1985	9,265	983	7,000	0
1984	15,445	508	4,616	0
1983	10,254	0	2,607	0
1982	7,171	0	2,822	0
1981	8,096	0	3,542	0
1980	2,969	0	3,320	0
1979	3,849	0	3,131	0
1978	6,939	2,041	1,817	0
1977	14,605	1,534	1,719	0
1976	15,145	0	1,044	0
1975	13,486	0	317	0
1974	17,738	0	1,489	0
1973	15,000	0	700	0
1972	18,100	0	600	0
1971	13,200	0	600	0
1970	0	0	300	0
1969	0	0	300	0
1968	0	0	600	0
1967	0	0	500	0
1966	0	0	100	0
1965	0	0	0	0
1964	0	0	0	0
1963	0	0	0	0
1962	0	0	0	0
1961	0	0	0	0
1960	0	0	0	0
1959	0	0	0	0
1958	0	0	0	0
1957	0	0	0	0
1956	0	0	0	0
1955	0	0	0	0
1954	0	0	0	0
1953	0	0	0	0
1952	0	0	0	0
1951	0	0	0	0
1950	0	0	0	0

Table 3: FAO "Greenback horse mackerel" (*T. declivis*) Catches (t) Between 1950 – 2007

Land Area	Australia	Australia	Estonia	Georgia	Japan	Latvia	Lithuania	Poland	Russian Federation	Ukraine	Un. Sov. Soc. Rep.
Ocean Area	Indian Ocean, Eastern - FAO57	Pacific, Southwest - FAO81	Pacific, Southwest - FAO81	Pacific, Southwest - FAO81	Indian Ocean, Eastern - FAO57	Pacific, Southwest - FAO81	Pacific, Southwest - FAO81	Indian Ocean, Eastern - FAO57	Pacific, Southwest - FAO81	Pacific, Southwest - FAO81	Pacific, Southwest - FAO81
2007	624	64	0	0	0	0	0	0	647	0	0
2006	889	50	0	0	0	0	0	0	0	20,627	0
2005	1,923	68	0	0	0	0	0	0	0	0	0
2004	3,403	92	0	0	0	0	0	0	0	22,600	0
2003	2,250	112	0	0	0	0	0	0	0	25,016	0
2002	594	40	0	0	0	0	0	0	0	5,667	0
2001	82	71	0	0	0	0	0	0	0	7,577	0
2000	323	129	0	0	0	0	0	0	0	12,213	0
1999	0	16	0	0	0	0	0	0	223	15,306	0
1998	0	18	0	0	0	0	0	0	52	9,309	0
1997	0	30	0	0	0	0	0	0	886	9,740	0
1996	0	68	0	0	0	0	0	0	2,280	13,093	0
1995	0	0	0	0	0	0	0	0	1,602	8,990	0
1994	0	0	0	0	0	0	0	0	1,804	4,192	0
1993	0	0	0	0	0	0	0	0	4,260	7,937	0
1992	0	0	0	0	0	0	0	0	2,892	2,878	0
1991	0	0	16,392	2,563	141	13,639	12,752	0	78,949	8,157	0
1990	0	0	516	0	0	9,266	6,064	0	47,537	4,135	0
1989	0	0	2,016	0	0	7,490	5,368	0	39,293	2,292	0
1988	0	0	2,422	0	0	3,541	2,633	0	49,333	868	0
1987	0	0	0	0	0	0	0	0	0	0	107,329
1986	0	0	0	0	0	0	0	0	0	0	105,479
1985	0	0	0	0	0	0	0	0	0	0	20,090
1984	0	0	0	0	0	0	0	0	0	0	11,068
1983	0	0	0	0	0	0	0	0	0	0	10,651
1982	0	0	0	0	0	0	0	0	0	0	4,705
1981	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	24	0	0	13
1979	0	0	0	0	0	0	0	18	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	254
1977	0	0	0	0	4	0	0	0	0	0	710
1976	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0
1961	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	0
1959	0	0	0	0	0	0	0	0	0	0	0
1958	0	0	0	0	0	0	0	0	0	0	0
1957	0	0	0	0	0	0	0	0	0	0	0
1956	0	0	0	0	0	0	0	0	0	0	0
1955	0	0	0	0	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0	0	0	0
1953	0	0	0	0	0	0	0	0	0	0	0
1952	0	0	0	0	0	0	0	0	0	0	0
1951	0	0	0	0	0	0	0	0	0	0	0
1950	0	0	0	0	0	0	0	0	0	0	0