

Estimation of New Zealand monthly purse-seine and midwater trawl catches of *Trachurus novaezelandiae*, *T. declivis* and *T. murphyi* by fisheries management area from October 1985 to December 2010

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EXECUTIVE SUMMARY

Penney, A.J.; Loveridge C.J.; Moriarty, J.A.; George, K. (2011). Estimation of New Zealand monthly purse-seine and midwater trawl catches of *Trachurus novaezelandiae*, *T. declivis* and *T. murphyi* by fisheries management area from October 1985 to December 2010.

New Zealand Fisheries Assessment Report 2011/41

The New Zealand pelagic purse-seine, trawl and midwater trawl jack mackerel fisheries occur entirely within the New Zealand fishing zone (Territorial Sea and EEZ) and target three species, *Trachurus novaezelandiae*, *T. declivis* and *T. murphyi* in a mixed species fishery that includes other pelagic species such as kahawai (*Arripis trutta*), blue mackerel (*Scomber australasicus*) and trevally (*Pseudocaranx dentex*). Catches are reported and managed as mixed jack mackerel, and species composition can only be determined after landing using observer and shed sampling species composition data. Penney & Taylor (2008) provided a description of this fishery, with first estimates of *T. murphyi* catches by fishing year (Oct – Sep) for the fishing years 1985–86 to 2005–06. However, the South Pacific RFMO requires data by calendar year and there are discrepancies between FAO and SPRFMO databases as a result of New Zealand reporting mixed jack mackerels to the FAO, but only *T. murphyi* to SPRFMO.

The purpose of this paper is evaluate methods for preparing a table of monthly species composition proportions for the jack mackerel species caught in the three New Zealand quota management areas from 1985 to 2010, and to use these to estimate monthly catches of each of species by fisheries management area and month. Updated monthly jack mackerel species proportions from shed sampling and observer programmes are used to generate monthly catch estimates by species for the three jack mackerel fisheries management areas: JMA 1, JMA 3 and JMA 7. Monthly estimates derived in this way are compared with species compositions derived in previous studies using Bayesian approaches to model jack mackerel species composition in JMA 7.

Resulting monthly catch estimates by species are used to investigate historical catch and catch composition trends in these fisheries, and to compare trends in estimated New Zealand *T. murphyi* catch with total southeast Pacific catches of this species. Recommendations are made regarding which method to use to prepare estimated New Zealand monthly jack mackerel catches by species in areas JMA 1, JMA 3 and JMA 7 for submission to SPRFMO and the FAO.

1. INTRODUCTION AND PURPOSE

The history of the New Zealand within-zone mixed species fishery for greenback horse mackerel *Trachurus declivis*, yellowtail horse mackerel *T. novaezelandiae* and Chilean jack mackerel *T. murphyi* has been described by Penney & Taylor (2008). The authors presented information on annual jack mackerel species composition estimates derived from at-sea observer and onshore shed sampling programmes, and used these to develop a historical catch record of New Zealand *T. murphyi* catches by fishing year (October – September) for the fishing years 1983–84 to 2005–06.

New Zealand has previously reported jack mackerel catches to the Food and Agricultural Organisation (FAO) as combined jack mackerels, not separated by species. After submission of the estimated New Zealand *T. murphyi* catches to the South Pacific Regional Fisheries Management Organisation (SPRFMO) in 2008, a subsequent review of differences and discrepancies between the FAO and SPRFMO databases by Garibaldi and Iball (2010) noted substantial differences between New Zealand jack mackerel catch data in these two databases. These differences result from the fact that the FAO database contains New Zealand catch data for all jack mackerel species combined, while the SPRFMO database contains estimated catch data for *T. murphyi* only. Garibaldi and Iball (2010) recognise this in their review, noting that:

“New Zealand reported to SPRFMO only its estimated EEZ tonnage of *T. murphyi*, but NZ’s total EEZ catch of *Trachurus* species is also composed of *T. declivis* and *T. novaezelandiae*; EEZ catches of these latter two species have not been reported to SPRFMO. This probably accounts for the discrepancy between the FAO and SPRFMO catch data for New Zealand’s *Trachurus* catch in FAO 81.” (Garibaldi and Iball 2010)

In addition to the discrepancies between FAO and SPRFMO databases, the annual estimates of *T. murphyi* catch presented by Penney & Taylor (2008) were provided by fishing year, whereas SPRFMO requires data by calendar year. New Zealand has not provided an update of jack mackerel catches by species since Penney & Taylor (2008) provided catch estimates up to 2005–06. Penney & Taylor (2008) noted that New Zealand was in the process of developing improved estimates of catches of all three of the jack mackerel species, and that resulting estimates would change slightly from those reported to SPRFMO on a fishing year basis.

The purpose of this paper is to provide:

- Tables of monthly species composition proportions for the three jack mackerel species by New Zealand quota management area from 1985 to 2010;
- Estimates of monthly catch by quota management area for the three jack mackerel species caught in New Zealand fisheries, estimated using monthly species composition data to apportion monthly combined jack mackerel catches between species;
- Estimates of total catch by calendar year for the three jack mackerel species, summed from the monthly catch estimates by species described above, and;
- Illustrative analyses of jack mackerel catch composition and historical catch trends in New Zealand fisheries from 1985 to 2010.

1.1 Data Extraction and Preparation

In this paper, the code JMA refers to all three jack mackerel species (*Trachurus declivis*, *T. novaezelandiae* and *T. murphyi*) caught in the New Zealand fishing zone (territorial sea plus EEZ) combined. The individual species are referred to using the codes JMD (*Trachurus declivis*), JMN (*T. novaezelandiae*) and JMM (*T. murphyi*). These three species are caught and managed in the New Zealand zone in three separate quota management areas: JMA 1, JMA 3 and JMA 7 (see Figure 1), these being referred to, for management purposes, as administrative fishstocks. For the purposes of this analysis, 83 t of jack mackerel caught in JMA 10 in 1992–93 have been ignored.

The annual Science Plenary Report produced by the New Zealand Ministry of Fisheries (Ministry of Fisheries 2010) contains the final, validated and official annual catch totals for each of these management areas, as documented for purposes of management under the Quota Management System. This plenary report shows the amount of JMA caught by fishing year (Oct – Sept) by fishstock and provides official totals for the period 1983–84 to 2008–09. JMA catch totals in this plenary report were used as the definitive catch totals for the purposes of comparing and raising monthly catch data by species to the official JMA total catches.

Step 1. Extraction of monthly catch data

Monthly combined jack mackerel catch data were extracted from the following four fisheries databases, for different historical periods:

- Monthly harvest returns (MHRs) introduced in October 2001. MHR figures were used for the recent period after October 2001.
- Quota management returns (QMRs) used from the period October 1986 until September 2001, except for 1986–87 in JMA 3 where FSU figures were used (as there was very little QMR

reported catch) and 1993–94, 1994–95 in JMA 1 and JMA 3 where Landings figures were used (as advised in the plenary report).

- Fisheries Statistical Unit (FSU) figures available for the period prior to October 1986. The annual plenary report indicated that FSU figures should be used for the period October 1983 up until September 1988.
- These data preceded definition of fisheries management areas, so JMA areas were determined geospatially using Lat/Long positions (where available) or smaller statistical areas.
- Catch Landings data (landings) available by fishstock from October 1986 onwards.
- The plenary report used landing data for JMA 1 and JMA 3 during 1993–94 and 1994–95.

A summary of total JMA (all species) catches by fishing year and fisheries management area in data extracted from the four fisheries databases is given in Table 1.

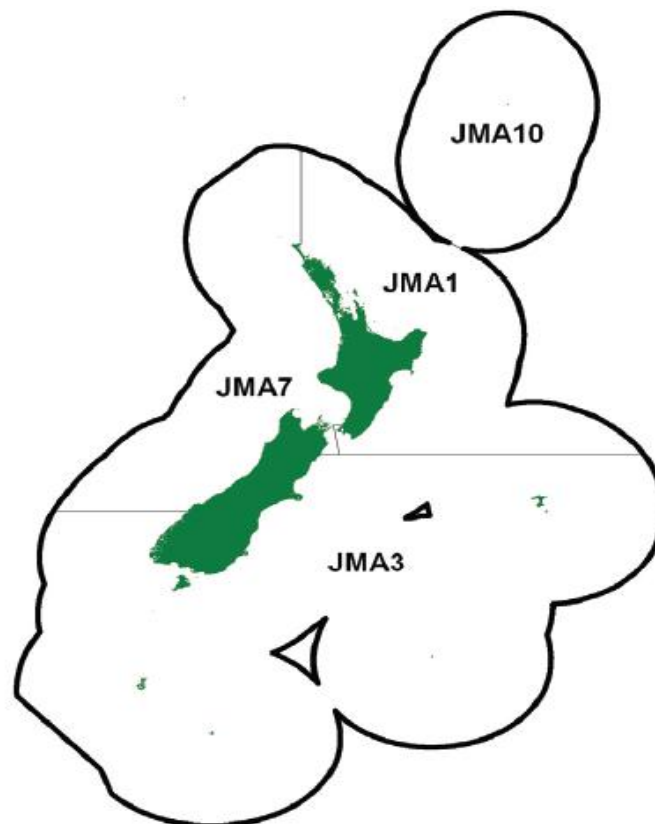


Figure 1: New Zealand jack mackerel (JMA) quota management areas.

Step 2: Determination of monthly species composition

Species proportions are determined under annual research contracts with the National Institute of Water & Atmospheric Research (NIWA) from shed sampling and at-sea observer sampling data. These were updated to 2010, and supplied as monthly species proportion tables from September 1985 to December 2010 for JMA 3 and JMA 7, and for the period October 1994 to December 2009 for JMA 1 (Paul Taylor, NIWA, pers comm). As a result of lack of sampling, some months within these periods do not have species composition estimates. Separate annual (fishing year) species composition tables were also provided for the fishing years 1985–86 to 2009–10, and for JMA 1 for the fishing years 1993–94 to 2009–10.

Table 1: Total JMA (all species) catches by fishing year and fisheries management area in data extracted from the four fisheries databases used in preparing monthly jack mackerel summaries.

Fish_year	JMA 1	JMA 3	JMA 7	JMA 10	Total	Figure used
1983–84	3 682	715	12 464		16 880	no match
1984–85	1 857	1 223	16 013		*19 659	Incomplete
1985–86	1 173	2 228	10 002		*14 773	FSU
1986–87	4 056	1 638	19 815		25 509	QMR/FSU for JMA 3
1987–88	3 108	1 883	17 827		22 818	QMR
1988–89	2 986	1 919	17 402		22 308	QMR
1989–90	4 226	4 013	21 776		30 102	QMR
1990–91	6 472	6 403	17 786		30 661	QMR
1991–92	7 017	5 779	25 880		38 676	QMR
1992–93	7 529	15 399	24 767	83	47 778	QMR/no match for JMA 10
1993–94	14 256	9 115	22 377		45 748	Landings/QMR for JMA 7
1994–95	7 832	11 519	18 913		38 264	Landings/QMR for JMA 7
1995–96	6 874	19 803	12 270		38 947	QMR
1996–97	6 912	15 687	12 056		34 655	QMR
1997–98	7 695	15 452	14 292		37 439	QMR
1998–99	5 767	15 111	13 574		34 452	QMR
1999–00	2 866	10 306	7 889		21 061	QMR
2000–01	8 360	2 744	15 703		26 806	QMR
2001–02	5 247	5 000	22 338		32 586	MHR
2002–03	6 172	2 225	26 084		34 483	MHR
2003–04	7 396	705	28 883		36 989	MHR
2004–05	9 418	716	36 507		46 641	MHR
2005–06	9 924	5 000	27 782		42 706	MHR
2006–07	5 293	1 857	32 039		39 189	MHR
2007–08	11 167	2 629	34 059		47 855	MHR
2008–09	9 791	1 964	28 828		40 583	MHR
2009–10	9 086	2 706	31 152		42 944	MHR

(* includes catches where fishing area is unknown)

Recommended procedures for estimating or substituting missing species catch proportions for months and JMA areas prior to October 1994, for which sampling data are not available, were discussed by the Ministry of Fisheries Northern Inshore Fisheries Assessment Working Group on 24 March 2011. The working group recommended that:

- For all years in which some monthly species catch proportion estimates are available, catch-weighted calendar-year average proportions of jack mackerel species in each area should be used to estimate species proportions for months in that calendar year and JMA area that were not sampled. Calendar year species proportions should be the catch-weighted average of sampled monthly species proportions in that area within the calendar year, but not across years.
- Similarly, for the four months in 1985 and 1986 where part of the jack mackerel catch was not recorded by sub-area, the proportion of the catch in each QMA in those four months should be estimated from the catch-weighted average species proportions by sub-area across other months within those years.
- The weighted-average annual proportions of JMM in the JMA 7 catch (calculated as above) should be used directly as estimates of the proportions of JMM in JMA 1 prior to October 1994, for which no species composition data are available.

- After allocation of JMM proportion in JMA 1 in the months prior to October 1994, the JMN and JMD split of the remaining catch should be based on the proportion of JMN in the combined JMN/JMD catch for the 1995–2009 period.

This last assumption is consistent with the Ministry of Fisheries annual science plenary report for JMA 1, which notes that catches in JMA 1 were, “prior to 1992, dominated by *T. novaezelandiae*, but included a small component of *T. declivis*”. Over the period 1995 to 2009, based on initial estimates of species proportions using annual species proportions only, JMN contributed 84% of the combined JMN/JMD catch in JMA 1, and JMD contributed 11% (Table 2).

Table 2: Initial estimates of JMD and JMN calendar year catches in JMA 1 from 1995 to 2009, JMN proportions of the combined JMD/JMN catch and overall proportion of JMN in the JMD/JMN catch over that period. This overall proportion (84%) was used to estimate JMD and JMN catch proportions of remaining catch after allocation of JMM proportion in JMA 1 over the years 1985 to 1994.

Year	JMD	JMN	JMN %
1995	809	3 064	79%
1996	129	6 093	98%
1997	440	5 148	92%
1998	660	4 192	86%
1999	431	2 612	86%
2000	125	3 020	96%
2001	342	7 934	96%
2002	1 718	3 872	69%
2003	958	5 062	84%
2004	3 289	4 248	56%
2005	76	10 566	99%
2006	1 153	6 239	84%
2007	2 434	5 373	69%
2008	3 768	8 394	69%
2009	38	7 387	99%
Total	16 369	83 207	84%

Catch-weighted JMA sub-area proportions were estimated for calendar years 1985 and 1986 from months in those years in which catch by JMA area was known. These were used to apportion that part of the catch for which no sub-area was reported in four months in those years. Catch-weighted average species proportions were calculated for each calendar year from months within each year for which sampling or observer data were available. In some years, after rounding of species proportions, a few of the proportions summed to 0.99 or 1.01. The highest proportion in that stratum was simply raised or lowered by 0.01 to get proportions to sum to 1.

The resulting weighted average annual species proportions by year and FMA sub-area in Table 3 were substituted for months for which no monthly species proportion estimates were available. This provided a table of monthly species composition estimates for all three JMA species for each of the JMA fisheries management areas for all months in which catches were reported, attached in Appendix A. This table was then used to apportion monthly catches in each JMA area between the three species, to produce a table of estimated monthly catches by species by JMA area for the period January 1985 to December 2010.

The number of month-area strata in which substitutions were made is summarised in Table 4. A total of 909 JMA Area / Year / Month strata occur in the monthly catch data table. Of these, monthly species composition data were available for 382 strata covering 61% of the total catch. Catch-weighted calendar year species proportions were used for 431 strata covering 34% of the catch, and JMA 7 weighted annual species composition were used for 96 strata in JMA 1, covering 4% of the catch (see Appendix A).

Table 3: Monthly-catch weighted calendar year average proportions of *Trachurus novaezelandiae* (JMN), *T. declivis* (JMD) and *T. murphyi* (JMM) in catches in the three JMA fisheries management areas from 1985 to 2010.

Calendar Year	JMA 1 Species Proportions			JMA 3 Species Proportions			JMA 7 Species Proportions		
	JMN	JMD	JMM	JMN	JMD	JMM	JMN	JMD	JMM
1985	0.32	0.68	0.00	0.00	0.00	1.00	0.32	0.68	0.00
1986	0.84	0.16	0.00	0.00	0.00	1.00	0.41	0.59	0.00
1987	0.84	0.16	0.00	0.21	0.79	0.00	0.55	0.45	0.00
1988	0.84	0.16	0.00	0.02	0.19	0.79	0.41	0.59	0.00
1989	0.76	0.14	0.10	0.00	0.12	0.88	0.40	0.50	0.10
1990	0.84	0.16	0.00	0.00	0.00	1.00	0.76	0.24	0.00
1991	0.72	0.14	0.14	0.00	0.00	1.00	0.41	0.45	0.14
1992	0.54	0.10	0.36	0.00	0.00	1.00	0.16	0.48	0.36
1993	0.57	0.11	0.32	0.00	0.30	0.70	0.24	0.44	0.32
1994	0.05	0.19	0.76	0.00	0.31	0.69	0.18	0.28	0.54
1995	0.48	0.13	0.39	0.00	0.03	0.97	0.11	0.13	0.76
1996	0.86	0.02	0.12	0.00	0.01	0.99	0.19	0.34	0.47
1997	0.58	0.05	0.37	0.00	0.00	1.00	0.15	0.31	0.54
1998	0.55	0.09	0.36	0.00	0.02	0.98	0.34	0.45	0.21
1999	0.73	0.12	0.15	0.00	0.16	0.84	0.11	0.70	0.19
2000	0.94	0.04	0.02	0.01	0.53	0.46	0.13	0.48	0.39
2001	0.95	0.04	0.01	0.00	0.14	0.86	0.12	0.86	0.02
2002	0.69	0.30	0.01	0.01	0.18	0.81	0.07	0.84	0.09
2003	0.83	0.15	0.02	0.00	0.70	0.30	0.55	0.44	0.01
2004	0.50	0.38	0.12	0.00	0.06	0.94	0.35	0.59	0.06
2005	1.00	0.00	0.00	0.00	0.05	0.95	0.15	0.80	0.05
2006	0.75	0.25	0.00	0.12	0.50	0.38	0.25	0.72	0.03
2007	0.77	0.17	0.06	0.00	0.12	0.88	0.23	0.70	0.07
2008	0.47	0.40	0.13	0.00	0.13	0.87	0.23	0.70	0.07
2009	1.00	0.00	0.00	0.00	0.20	0.80	0.26	0.69	0.05
2010	1.00	0.00	0.00	0.01	0.50	0.49	0.18	0.75	0.07

Table 4: Total number of JMA_area / Year / Month strata in the monthly catch composition data table, showing the number of strata and catches for which monthly species composition data were available, and the numbers of strata for which catch-weighted annual averages were substituted, and for which JMA 7 annual proportions were used for JMA 1 strata.

Species Proportions Used	No. Strata	Catch	Proportion
Total Area_Year_Month strata	909	888 559 766	100%
Monthly proportions	382	545 245 974	61%
Calendar year proportions	431	303 686 630	34%
JMA 7 proportions	96	39 627 162	4%
			100%

Step 3: Raising of monthly catch estimates to Plenary Report totals

In order to ensure that monthly estimated catches by species summed to the correct official JMA totals in the plenary report, raising factors were determined by summing the monthly catches calculated from the table in Appendix A back up into fishing year totals for all fishstocks, and comparing these with the jack mackerel combined fishstock totals by fishing year in the plenary report. Discrepancies between the summed monthly catches by fishing year and the plenary report totals were used to calculate raising factors for each fishing year. Table 5 shows a summary of the total catches by fishing year from the monthly catches, the totals reported in the plenary report, the discrepancies between these two totals and the resulting raising factors.

For the 25 fishing years in the analysis, totals from monthly data exactly matched the plenary totals in 18 fishing years. Minor discrepancies (1 t to 5 t) occurred in five fishing years, and slightly larger discrepancies (83 t and 87 t) occurred in two fishing years (Table 5). Raising factors calculated from the ratio of plenary totals over summed monthly totals were used to raise each of the individual monthly catch estimates by JMA area to correct for these discrepancies.

After raising, the final monthly catch estimates sum exactly to the official plenary JMA total catches for all fishing years. The resulting final monthly catch table by species and JMA area (attached in Appendix B) can be used to generate tables of estimated total catch by species by fishing year, calendar year, fisheries management area or all areas, as required for data submission purposes to the South Pacific RFMO and the FAO.

2. HISTORICAL CATCH COMPOSITION AND CATCH TRENDS

The final raised estimates of New Zealand annual (calendar year) catch of the three jack mackerel species using the monthly estimation procedures described above is shown in Table 6 and Figure 2. Catches increase rapidly from 17,495 t in 1986 to a peak of 49,282 t in 1993, primarily as a result of the rapid increase in abundance and availability of *T. murphyi* in the New Zealand zone over that period (see description in Penney & Taylor 2008).

Declining *T. murphyi* availability resulted in a decline in total catches to 22,554 t in 2000. However, this was offset by increasing catches of the other two species, particularly *T. declivis*, after 2000, with the total all species catch reaching 47,395 t in 2008. Catches subsequently declined to about 40,000 t in 2009 and 2010.

The total allowable commercial catch (TACC) limits were steadily increased over 1985–86 to 1992–93, to allow for increased catches of *T. murphyi*, reaching a combined TACC for the three JMA areas of 41,206 t in 1992–93 (Table 6 and Figure 2). The combined TACC continued to be increased over the next two years despite rapidly declining *T. murphyi* catches, reaching 60,536 t in 1994–95. The combined TACC has remained at that level since 1995, eventually being well over double the jack mackerel catch in 2000, the year of lowest catches. The jack mackerel catch has since increased to reach almost 80% of the combined TACC in 2008 (Figure 2).

As a result of the rapid increase and subsequent decline in the availability of *T. murphyi* in the New Zealand region, the contribution of this species to catches has changed substantially over time. Using the monthly species proportion estimation procedures developed in this paper, *T. murphyi* contributed an estimated maximum 76% of the New Zealand jack mackerel catch in 1995, but only contributed an estimated 8% of the catch in 2010 (Figure 3).

There have, however, been substantial differences in trends in species composition between the three fisheries management areas, with overall catches in each fisheries management area being dominated by a different species (Table 7 and Figure 4).

Table 5: Comparison of summed, estimated monthly JMA (all species) catches by fishing year and fisheries management area, and official total catches reported in the annual science plenary report, showing discrepancies and resulting raising factors.

Fishing Year	JMA 1	JMA 3	JMA 7	Final Total	Plenary Total	Discrepancy (t)	Raising Factor
1985–86	1 268	2 294	11 211	14 773	14 773	0	1
1986–87	4 056	1 638	19 815	25 509	25 509	0	1
1987–88	3 108	1 883	17 827	22 818	22 818	0	1
1988–89	2 986	1 919	17 402	22 307	22 308	1	1.000045
1989–90	4 226	4 013	21 776	30 015	30 102	87	1.002899
1990–91	6 472	6 403	17 786	30 661	30 661	0	1
1991–92	7 017	5 779	25 880	38 676	38 676	0	1
1992–93	7 529	15 399	24 767	47 695	47 778	83	1.001740
1993–94	14 256	9 115	22 377	45 748	45 748	0	1
1994–95	7 832	11 519	18 913	38 264	38 264	0	1
1995–96	6 874	19 803	12 270	38 947	38 947	0	1
1996–97	6 912	15 687	12 056	34 655	34 655	0	1
1997–98	7 695	15 452	14 292	37 439	37 439	0	1
1998–99	5 767	15 111	13 574	34 452	34 452	0	1
1999–00	2 866	10 306	7 889	21 061	21 061	0	1
2000–01	8 360	2 744	15 703	26 807	26 806	-1	0.999963
2001–02	5 247	5 000	22 338	32 585	32 586	1	1.000031
2002–03	6 172	2 225	26 084	34 481	34 483	2	1.000058
2003–04	7 396	705	28 883	36 984	36 989	5	1.000135
2004–05	9 418	716	36 507	46 641	46 641	0	1
2005–06	9 924	5 000	27 782	42 706	42 706	0	1
2006–07	5 293	1 857	32 039	39 189	39 189	0	1
2007–08	11 167	2 629	34 059	47 855	47 855	0	1
2008–09	9 791	1 964	28 828	40 583	40 583	0	1
2009–10	9 086	2 706	31 152	42 944	42 944	0	1

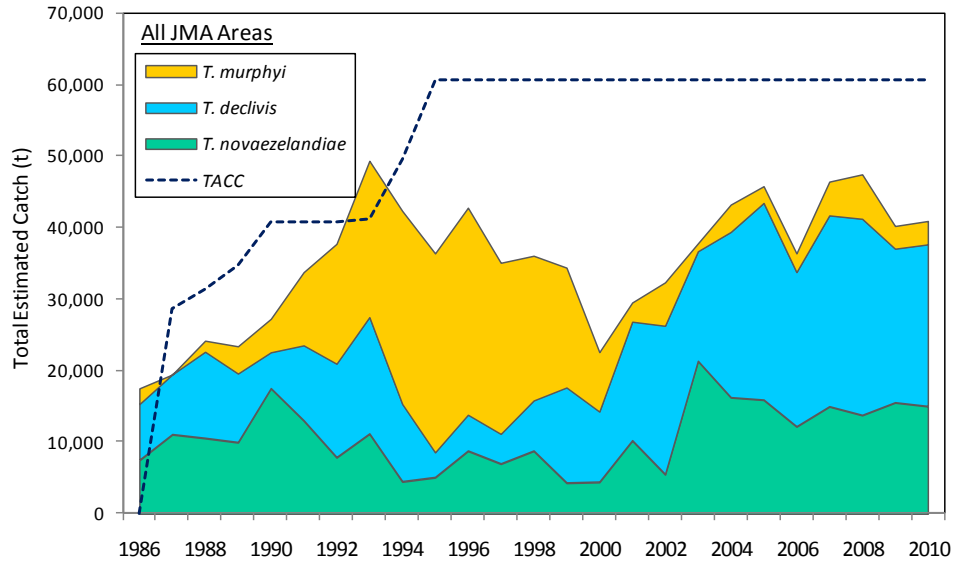


Figure 2: Estimated total New Zealand jack mackerel catch by species by calendar year, compared to total allowable commercial catch (TACC) limits for combined jack mackerel species, over the period 1986 – 2010 (from Table 6).

Table 6: Estimated total New Zealand jack mackerel catch by species by calendar year from 1986 to 2010, from estimated monthly catches in Appendix B.

Year	<i>T. novaezelandiae</i>	<i>T. declivis</i>	<i>T. murphyi</i>	Total	TACC
1986	7 440	7 849	2 206	17 495	-
1987	11 029	8 400	0	19 429	28 670
1988	10 507	12 097	1 549	24 153	31 367
1989	9 921	9 637	3 812	23 370	34 678
1990	17 459	5 068	4 681	27 208	40 697
1991	12 962	10 535	10 232	33 729	40 739
1992	7 820	13 111	16 755	37 687	40 739
1993	11 124	16 320	21 837	49 282	41 206
1994	4 448	10 859	26 979	42 286	49 536
1995	5 034	3 514	27 803	36 351	60 536
1996	8 731	5 075	28 925	42 731	60 536
1997	6 934	4 193	23 909	35 036	60 536
1998	8 731	7 067	20 221	36 018	60 536
1999	4 266	13 347	16 745	34 359	60 536
2000	4 379	9 865	8 310	22 554	60 536
2001	10 171	16 634	2 684	29 489	60 536
2002	5 445	20 787	6 072	32 303	60 536
2003	21 278	15 362	1 108	37 749	60 536
2004	16 193	23 149	3 828	43 170	60 536
2005	15 858	27 535	2 344	45 736	60 536
2006	12 128	21 602	2 622	36 351	60 536
2007	14 925	26 729	4 721	46 374	60 537
2008	13 717	27 462	6 216	47 395	60 537
2009	15 481	21 521	3 171	40 174	60 537
2010	14 962	22 646	3 270	40 878	60 537
Total	270 941	360 363	250 000	881 305	
%	31%	41%	28%	100%	

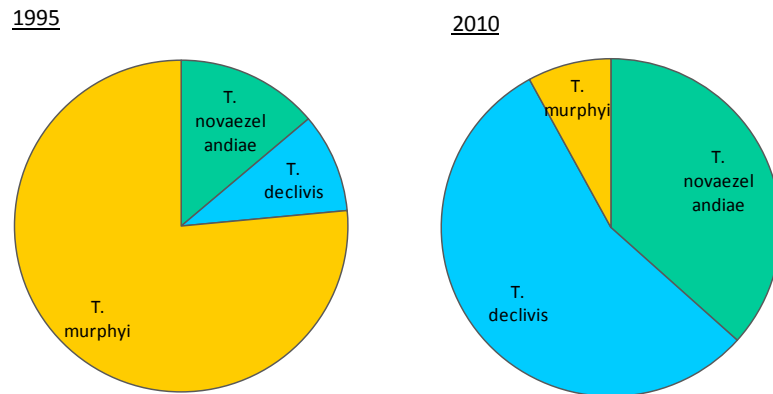


Figure 3: Changes in species composition estimated from monthly species composition data for the New Zealand jack mackerel fishery between 1995, at the peak of *T. murphyi* abundance, and 2010.

The rapid increase in availability, and catch, of *T. murphyi* that resulted from the substantial increase and westwards expansion of the Chilean jack mackerel stock in the late 1980s – mid 1990s is most evident in the trawl fishery in JMA 3, the area in which *T. murphyi* first appeared in New Zealand waters (Penney & Taylor 2008) (Figure 4, JMA 3). From 1990 to 2000, the pelagic fishery in this area was dominated by catches of *T. murphyi*, and catches of the other two species have been unimportant in JMA 3 throughout the history of the fishery. It was in this area that TACCs were most sharply increased to provide for increased *T. murphyi* catches, and where current TACCs substantially exceed current catches. However, to all intents and purposes, following the Pacific-wide decline and associated range contraction of the Chilean jack mackerel stock (SPRFMO 2010), there is no longer a significant jack mackerel fishery in JMA 3.

In the JMA 1 purse-seine fishery, which lies to the west of the jack mackerel fishing areas in JMA 3, the incursion of *T. murphyi* into New Zealand waters and its westward movement across the New Zealand fishing zone (Penney & Taylor 2008) appears as a sharp peak in estimated catches in 1993–94, with catches increasing rapidly to 14,256 t from only 2,986 t in 1988–89. Increased *T. murphyi* catches in JMA 1 were short-lived, essentially disappearing from this area by 1999–00. *T. novaezelandiae* has been the dominant jack mackerel species in this area, with estimated catches increasing slowly but steadily across the entire history of the fishery from 1,155 t in 1985–86 to 9,086 t in 2009–10. TACCs were also increased in this area to allow for increased *T. murphyi* catch, and the TACC exceeded catches over the period 1994–95 to 2003–04. However, jack mackerel catches have reached the TACC level in the last three years as a result of increased catches of *T. novaezelandiae*, with some increase in *T. declivis* catch in recent years.

Table 7: Estimated New Zealand jack mackerel catch by area and species by fishing year from 1985–86 to 2009–10, and overall species proportional contribution by area, from estimated monthly catches in Appendix B.

FishYear	JMA 1				JMA 3				JMA 7			
	JMN	JMD	JMM	TACC	JMN	JMD	JMM	TACC	JMN	JMD	JMM	TACC
1985–86	1 155	220	0		0	0	2 323		3 975	7 099	0	
1986–87	3 407	649	0	5 970	298	1 090	249	2 700	10 122	9 693	0	20 000
1987–88	2 611	497	0	5 970	83	500	1 301	2 700	7 263	10 564	0	22 697
1988–89	2 345	437	204	5 970	6	221	1 692	2 700	6 008	9 881	1 513	26 008
1989–90	3 424	644	170	5 970	0	63	3 962	2 700	16 170	5 400	269	32 027
1990–91	4 905	947	620	5 970	0	0	6 403	2 700	6 983	7 985	2 818	32 069
1991–92	4 038	757	2 222	5 970	0	0	5 779	2 700	5 500	11 870	8 510	32 069
1992–93	4 260	817	2 465	5 970	0	4 723	10 703	2 700	5 109	11 373	8 328	32 536
1993–94	2 502	2 433	9 321	8 000	0	2 718	6 397	9 000	4 625	6 833	10 919	32 536
1994–95	2 793	1 121	3 918	10 000	0	389	11 130	18 000	2 244	2 647	14 022	32 536
1995–96	6 005	176	692	10 000	0	181	19 622	18 000	2 177	3 656	6 436	32 536
1996–97	4 738	344	1 831	10 000	0	51	15 636	18 000	1 260	4 006	6 790	32 536
1997–98	4 017	369	3 309	10 000	0	329	15 123	18 000	5 035	6 342	2 915	32 536
1998–99	3 375	697	1 695	10 000	0	2 357	12 754	18 000	1 945	9 018	2 611	32 536
1999–00	2 447	186	233	10 000	133	5 079	5 094	18 000	579	4 082	3 228	32 536
2000–01	8 080	188	92	10 000	3	529	2 212	18 000	1 789	12 743	1 170	32 536
2001–02	4 257	956	35	10 000	28	884	4 089	18 000	2 148	18 990	1 201	32 536
2002–03	4 768	1 317	87	10 000	1	1 501	724	18 000	12 661	12 337	1 087	32 536
2003–04	3 888	2 940	569	10 000	0	60	645	18 000	9 290	18 323	1 274	32 536
2004–05	7 866	980	572	10 000	0	36	680	18 000	9 770	24 899	1 838	32 536
2005–06	8 407	1 500	17	10 000	595	2 477	1 927	18 000	6 028	20 587	1 167	32 536
2006–07	3 002	1 789	502	10 000	4	203	1 651	18 000	6 316	24 072	1 651	32 537
2007–08	7 334	3 348	485	10 000	0	372	2 257	18 000	9 318	22 103	2 638	32 537
2008–09	6 352	2 147	1 292	10 000	0	390	1 574	18 000	6 173	21 104	1 551	32 537
2009–10	9 086	0	0	10 000	24	1 332	1 351	18 000	7 582	21 408	2 163	32 537
		115	25	30								
Sum	061	459	331		1 174	25 483	135 277		150 071	307 016	84 099	
%	67%	15%	18%		1%	16%	84%		28%	57%	16%	

Midwater-trawl jack mackerel catches in JMA 7, the furthest west of the New Zealand jack mackerel fishing areas, have been dominated throughout the history of the fishery by *T. declivis*, a species that extends to Australian waters. *T. murphyi* only contributed significantly to catches in JMA 7 over the peak in availability of this species, from about 1991–92 to 1996–97. Increases in the jack mackerel TACC in JMA 7 preceded the arrival of *T. murphyi* and were related to the developing midwater trawl fishery for *T. declivis* in this area. Over the fishing years 1995–96 to 2001–02 there was reduced participation in this fishery, with catches substantially under the TACC. However, from 2001–02 onwards there was a rapid increase in participation in this fishery by foreign-charter vessels, with catches, primarily of *T. declivis*, fluctuating near the TACC level since 2003–04.

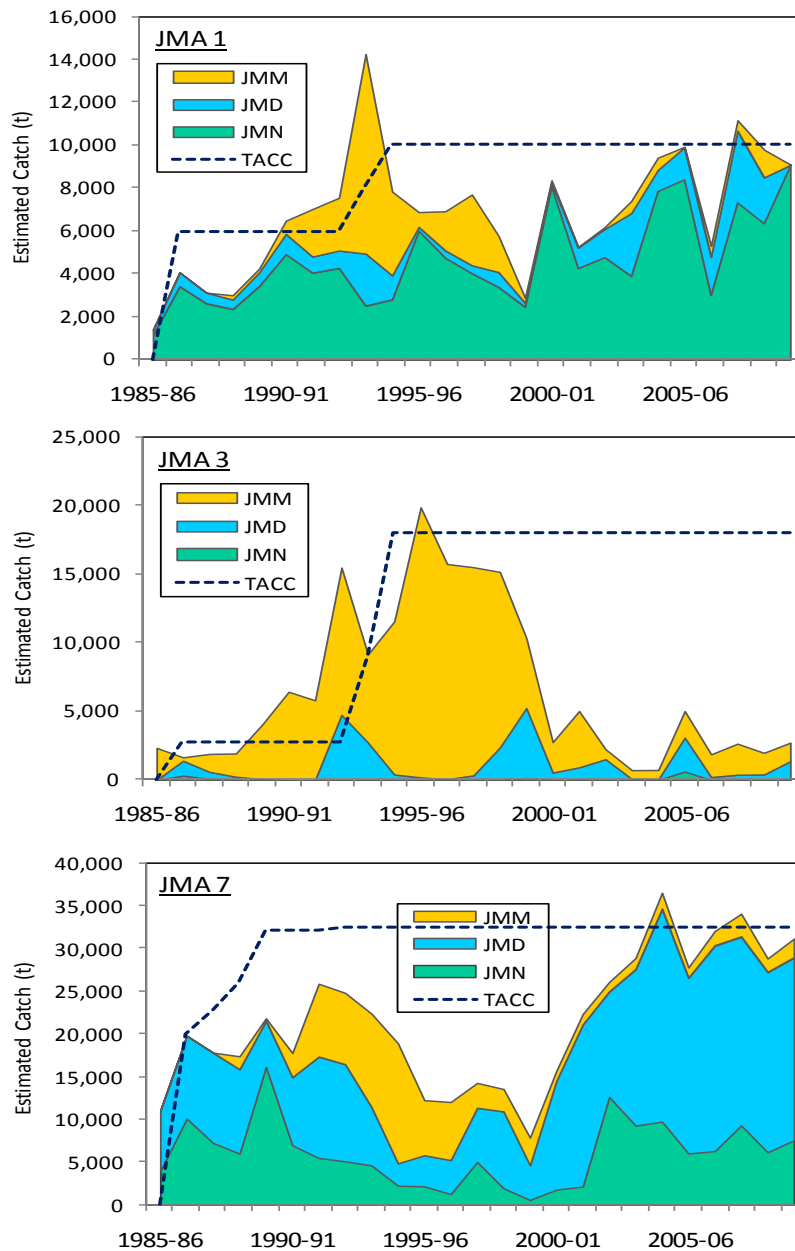


Figure 4: Comparison of historical trends in jack mackerel catch and catch composition by fishing year, compared to TACCs, in the three fisheries management areas from 1985–86 to 2009–10 (from Table 6).

3. COMPARISON WITH BAYESIAN SPECIES COMPOSITION ESTIMATES FOR JMA 7

The above analyses all use the monthly species proportion approach to estimating monthly jack mackerel species composition in catches in the three JMA areas, for the purpose of developing tables of estimated monthly catch by species by area and catch-by-species summaries by calendar year for submission to the South Pacific RFMO and the FAO. However, in preparation for possibly conducting a stock assessment for jack mackerel in JMA 7, the largest of New Zealand’s jack mackerel fisheries, Rohan et al. (2006) conducted a Bayesian estimation of jack mackerel species composition in JMA 7.

The purpose of their work was to correct for sampling biases resulting from differences in species composition in catches in six sub-areas of JMA 7 in summer and winter, with low observer sampling coverage in some of the resulting twelve strata (Rohan et al. 2006). The authors used a hierarchical Bayesian multinomial logistic regression to model the probability that a catch comprised *T. declivis*, *T. novaezelandiae* or *T. murphyi* depending on catch weight, latitude and longitude. Results confirmed that jack mackerel sampling practices in JMA 7 at the time were poor, and improvement in observer coverage was recommended to obtain improved estimates of species proportions.

The Bayesian estimates of JMA 7 species proportions by Rohan et al. (2006) have lower uncertainty than monthly frequency proportions, and differ quite markedly from frequency proportions in some of the twelve sub-population strata used. However, Rohan et al. (2006) only estimated species proportions by fishing year and did not derive estimates of monthly species proportions. Their results are therefore of limited use in estimating calendar-year species proportions for the purpose of international reporting.

To evaluate the magnitude of the differences, the species composition estimates of Rohan et al. (2006) were compared with the species proportions developed in this paper. Rohan et al. (2006) only provide species composition estimates for the fishing years 1986–87 to 2005–06 (Rohan et al. 2006 - Tables 8 and 9). JMA 7 species proportion estimates for 2006–07 to 2008–09 were obtained from Smith (2011), who used a ‘tree classification method’ to derive modelled species proportions. Species proportions estimated from monthly frequencies in this study were retained for 1985–86 and 2009–10.

A comparative monthly species proportion table was constructed for JMA 7 by substituting the Rohan et al. (2006) or Smith (2011) fishing-year species proportions for each month in the fishing years concerned. Given that species proportions prior to October 1994 in JMA 1 were assumed to be the same as in JMA 7, the effect of using these different JMA 7 species proportions for JMA 1 was also investigated by substituting Rohan et al. (2006) or Smith (2011) fishing-year values for months in JMA 1 prior to October 1994. Previously estimated monthly proportions from this paper were retained for 1985–86 and 2008–09.

The resulting comparative monthly catches by species in JMA 7 are shown in Appendix C and resulting comparative estimates of catch by species in the three fishing areas by fishing-year are summarised in Table 8. There was no change in species proportions used, and hence no change in estimated catch composition, for JMA 3. Changes in estimated species contribution in JMA 1 resulting from assuming JMA 7 Bayesian species proportions prior to October 1994 are small: 0.80% increase in JMN, 0.16% increase in JMD and 0.96% decrease in JMM; with no visually discernable change in historical trends in species composition.

Overall changes in species composition in JMA 7 are also small: 1.5% increase in JMN, 1.48% decrease in JMD and 0.02% decrease in JMM. However, there are noticeable differences in the estimated historical trends in species composition in JMA 7 from using the Bayesian species composition estimates (Figure 5), with higher estimated catches of JMN and JMD, and lower catches of JMM over the period 1994–95 to 1998–99. The spike in JMN catches in 1989–90 is removed and the proportion of JMN relative to JMD is higher over the past decade (compare Figure 4 – JMA 7 and Figure 5).

Table 8: Comparative estimated New Zealand jack mackerel catch by fishing area, by species, by fishing year from 1985–86 to 2009–10, and overall species proportional contribution by area, using Bayesian species composition estimates for JMA 7 from Rohan et al. (2006) for 1986–87 to 2005–06, and from Smith (2011) for 2006–07 to 2008–09 (shaded). The changes in percentage species contribution from the frequency proportion estimates in Table 7 are shown.

FishYear	JMA 1				JMA 3				JMA 7			
	JMN	JMD	JMM	TACC	JMN	JMD	JMM	TACC	JMN	JMD	JMM	TACC
1985–86	1 155	220	0		0	0	2 323		4 540	6 534	0	
1986–87	3 407	649	0	5 970	298	1 090	249	2 700	9 313	10 502	0	20 000
1987–88	2 611	497	0	5 970	83	500	1 301	2 700	5 526	12 301	0	22 697
1988–89	2 483	473	30	5 970	6	221	1 692	2 700	2 784	14 444	174	26 008
1989–90	3 560	678	0	5 970	0	63	3 962	2 700	8 517	13 322	0	32 027
1990–91	5 219	994	259	5 970	0	0	6 403	2 700	7 470	9 604	711	32 069
1991–92	4 833	921	1 263	5 970	0	0	5 779	2 700	8 799	12 422	4 658	32 069
1992–93	4 245	809	2 489	5 970	0	4 723	10 703	2 700	8 684	7 939	8 187	32 536
1993–94	2 506	2 429	9 321	8 000	0	2 718	6 397	9 000	4 475	10 741	7 161	32 536
1994–95	2 793	1 121	3 918	10 000	0	389	11 130	18 000	6 052	6 809	6 052	32 536
1995–96	6 005	176	692	10 000	0	181	19 622	18 000	3 681	5 276	3 313	32 536
1996–97	4 738	344	1 831	10 000	0	51	15 636	18 000	2 893	4 702	4 461	32 536
1997–98	4 017	369	3 309	10 000	0	329	15 123	18 000	5 431	5 002	3 859	32 536
1998–99	3 375	697	1 695	10 000	0	2 357	12 754	18 000	271	10 045	3 258	32 536
1999–00	2 447	186	233	10 000	133	5 079	5 094	18 000	0	4 418	3 471	32 536
2000–01	8 080	188	92	10 000	3	529	2 212	18 000	2 512	6 595	6 595	32 536
2001–02	4 257	956	35	10 000	28	884	4 089	18 000	6 255	13 403	2 681	32 536
2002–03	4 768	1 317	87	10 000	1	1 501	724	18 000	7 304	12 521	6 261	32 536
2003–04	3 888	2 940	569	10 000	0	60	645	18 000	8 955	16 754	3 178	32 536
2004–05	7 866	980	572	10 000	0	36	680	18 000	13 508	17 158	5 841	32 536
2005–06	8 407	1 500	17	10 000	595	2 477	1 927	18 000	10 557	11 668	5 556	32 536
2006–07	3 002	1 789	502	10 000	4	203	1 651	18 000	8 586	22 267	1 185	32 537
2007–08	7 334	3 348	485	10 000	0	372	2 257	18 000	9 196	22 070	2 793	32 537
2008–09	6 352	2 147	1 292	10 000	0	390	1 574	18 000	7 293	19 142	2 393	32 537
2009–10	9 086	0	0	10 000	24	1 332	1 351	18 000	5 607	23 364	2 181	32 537
Sum	116 434	25 728	28 690		1 174	25 483	135 277		158 213	299 005	83 968	
%	68%	15%	17%		1%	16%	84%		29%	55%	16%	
% Diff	0.80%	0.16%	-0.96%		0.00%	0.00%	0.00%		1.50%	-1.48%	-0.02%	

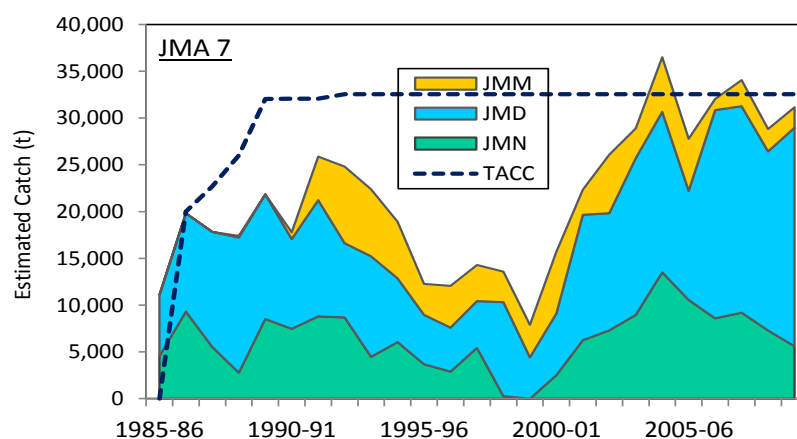


Figure 5: Estimated historical trends in jack mackerel catch and catch composition by fishing year, compared to TACC, in fishing area JMA 7 from 1985–86 to 2009–10, using the Bayesian species composition estimates of Rohan et al. (2006) and Smith (2011) (from Table 8). (Compare with frequency proportions in Figure 4 - JMA 7)

Comparative overall species composition of estimated New Zealand jack mackerel catches using Bayesian species composition for JMA 7 are shown in Table 9, showing the percentage differences in species composition compared with the monthly species composition estimates in Table 5.

Table 9: Estimated total New Zealand jack mackerel catch by species by calendar year from 1986 to 2010, using Bayesian species composition estimates from Rohan et al. (2006) and Smith (2011) for fishing area JMA 7. Overall species proportions and percentage differences from frequency proportions in Table 6 are shown.

Year	<i>T. novaezelandiae</i>	<i>T. declivis</i>	<i>T. murphyi</i>	Total	TACC
1986	7 894	7 395	2 206	17495	0
1987	9 365	10 064	0	19429	28 670
1988	8 019	14 536	1 598	24153	31 367
1989	6 959	14 601	1 810	23370	34 678
1990	10 791	11 637	4 780	27208	40 697
1991	13 219	12 222	8 287	33729	40 739
1992	13 444	12 632	11 611	37687	40 739
1993	13 295	13 879	22 108	49282	41 206
1994	4 934	14 917	22 434	42286	49 536
1995	8 898	7 775	19 678	36351	60 536
1996	10 133	6 212	26 386	42731	60 536
1997	8 374	5 119	21 543	35036	60 536
1998	8 796	6 229	20 993	36018	60 536
1999	2 889	13 412	18 058	34359	60 536
2000	3 844	10 033	8 677	22554	60 536
2001	11 768	9 805	7 916	29489	60 536
2002	9 986	14 831	7 486	32303	60 536
2003	13 663	17 548	6 538	37749	60 536
2004	15 650	21 335	6 184	43170	60 536
2005	23 442	15 564	6 730	45736	60 536
2006	14 226	16 873	5 253	36351	60 536
2007	16 265	25 923	4 186	46374	60 537
2008	14 664	26 231	6 500	47395	60 537
2009	14 390	21 820	3 964	40174	60 537
2010	14 984	22 591	3 303	40878	60 537
				881	
Total	279 890	353 186	248 229	305	
%	32%	40%	28%	100%	
% Diff	1.02%	-0.81%	-0.20%	0%	

Using Bayesian species composition estimates for JMA 7, there are small changes in overall species composition over the period 1986–2010: a 1.02% increase in the proportion of JMN, 0.81% decrease in JMD and 0.20% decrease in JMM (Table 9). However, there are differences in the historic trends in species composition, with less fluctuation in JMN and JMD contributions and overall higher JMN catch (compare Figure 2 and Figure 6). Use of Bayesian species composition estimates also results in a substantially lower estimate of the contribution of *T. murphyi* to catches at the peak of the fishery. Whereas monthly species composition data estimate that *T. murphyi* contributed 76% of the total New Zealand jack mackerel catch in 1995 (Figure 3), Bayesian species composition estimates that *T. murphyi* contributed a maximum 62% of the jack mackerel catch, in 1996.

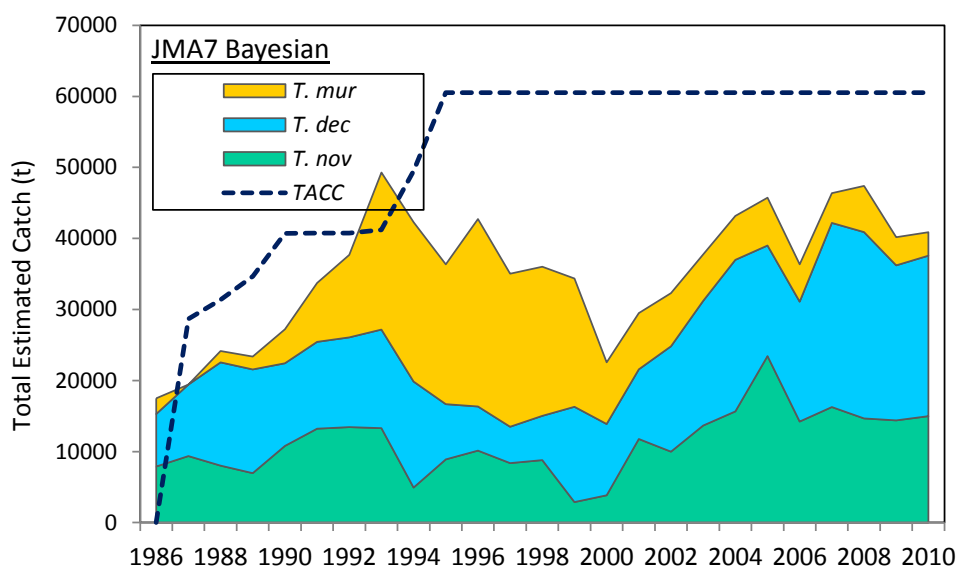


Figure 6: Estimated total New Zealand jack mackerel catch by species by calendar year, using Bayesian species composition estimates from Rohan et al. (2006) and Smith (2011) for fishing area JMA 7, compared to total allowable commercial catch (TACC) limits for combined jack mackerel species, over the period 1986–2010, (from Table 9). (Compare with monthly species proportions in Figure 2)

4. COMPARISON OF NEW ZEALAND AND SOUTH ATLANTIC *TRACHURUS MURPHYI* CATCHES

The primary motivation for this work was to revise and update the New Zealand *T. murphyi* fishing-year catch estimates provided by Penney & Taylor (2008), and to generate estimates of New Zealand jack mackerel catches by species by calendar year, rather than by fishing year, for reporting to the South Pacific RFMO and the FAO.

Figure 7 shows the historical trend in *T. murphyi* calendar year catches estimated in this study from monthly species composition data, compared with the fishing year estimates provided by Penney & Taylor (2008), calendar year estimates using Bayesian species proportion estimates for JMA 7, and the total reported SE Pacific *T. murphyi* catch. Note that fishing years are plotted using the later of the two calendar years e.g. 1996–97 fishing year is compared with the calendar year 1997.

Calendar year estimates of New Zealand *T. murphyi* catch (this study) are higher than those reported by Penney & Taylor (2008), and higher than estimates using Bayesian species proportions (Rohan et al. 2006, Smith 2011), over the peak in the fishery for this species from 1991 to 1997, but closely track the Penney & Taylor (2008) fishing year estimates from 1998 onwards, with an overall correlation over the period 1986 (1985–86) to 2006 (2005–06) of 0.97. The calendar year catch estimates using Bayesian species composition for JMA 7 closely track the Penney & Taylor (2008) fishing year estimates from 1985 to 2000, and from 2007 onwards, but are higher from 2001 to 2006 as a result of the increase in estimated *T. murphyi* contribution in JMA 7 estimated from Bayesian modelling (overall correlation 0.98).

All three data series show the correlation between New Zealand catches of *T. murphyi* and total reported the SE Pacific catches first reported by Penney & Taylor (2008). The New Zealand fishery reflects the increase and westwards expansion in *T. murphyi* abundance across the South Pacific in the late 1980s – early 1990s, the peak of the fishery in 1995 and the subsequent rapid decline in catches from 1996–2000 (Figure 7).

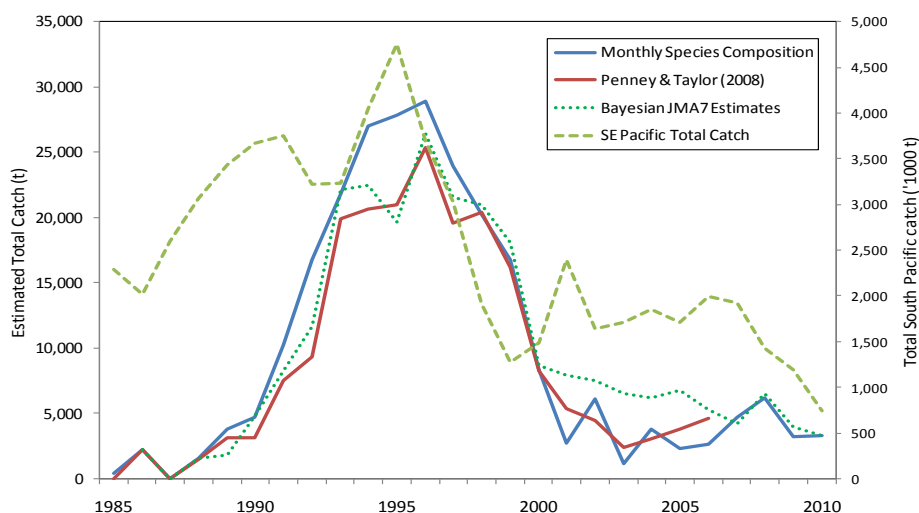


Figure 7: Historical trend in total New Zealand catch of *Trachurus murphyi* estimated from monthly species composition data, compared with fishing-year estimates by Penney & Taylor (2008) (plotted against the second year in the fishing year), estimates using Bayesian species composition for JMA 7, and the total reported SE Pacific Chilean jack mackerel catch.

The overall correlation between the calendar year estimates of New Zealand *T. murphyi* catch from this study and the total SE Pacific catches over 1985 to 2010 is only 0.56. However, the increase in availability of this species in the New Zealand region lagged behind the increase in catches in the SE Pacific by a decade, and the estimates more closely track the Pacific-wide decline in *T. murphyi* abundance, with a correlation of 0.80 over the years 1992–2010.

5. CHOICE OF CATCH ESTIMATES TO REPORT TO SPRFMO AND THE FAO

The availability of alternative jack mackerel catch-composition estimates complicates the process of reporting these internationally. A choice must be made regarding which estimates of catch-by-species to use and, once reported, these will constitute the international ‘official’ New Zealand catch record for *T. novaezelandiae*, *T. declivis* and *T. murphyi*. This is further complicated by the fact that international reporting must be done on a calendar year basis, whereas all previous New Zealand estimates of jack mackerel catch composition have been based on fishing years.

In principle, a statistically modelled approach that accounts for changes in species composition by month, latitude, longitude, catch method, depth and catch magnitude should be the preferred approach, to correct for bias in sample coverage and reduce uncertainty in species composition estimates. However, Bayesian modelling work has only been conducted for JMA 7, has not investigated monthly species composition and has only produced catch composition estimates by fishing year. These results cannot be used directly, but could be used in some way, such as has been done in this paper, to generate calendar year estimates for international reporting.

The following approaches are therefore recommended for generating jack mackerel monthly and calendar-year catch-by-species estimates for the JMA 1, JMA 3 and JMA 7 fisheries:

- There has been no species composition modelling work conducted for JMA 3, and monthly species composition data are available for JMA 3 from 1986 onwards. The approach taken in this paper provides the only estimates of jack mackerel species composition for JMA 3 and the monthly catch estimates for JMA 3 in Appendix B should be reported internationally.

- There has also been no species composition modelling work conducted for JMA 1. In the absence of species composition data for JMA 1 prior to October 1994, it has been assumed that species composition in this area was the same as in JMA 7, raising the question of which JMA 7 species composition estimates to use for JMA 1: the monthly species composition data; or the modelled estimates of species composition by fishing year? The Bayesian modelling results for JMA 7 would also not be expected to be relevant for JMA 1. The assumption that the *T. murphyi* proportions were the same in the multi-species JMA 1 purse-seine fishery as in the JMA 7 targeted midwater trawl fishery is tenuous anyway, and the effect of using alternative JMA 7 species composition estimates for JMA 1 is slight. It is therefore recommended that the monthly catch estimates for JMA 1 in Appendix B should also be reported internationally.
- The choice of which catch estimates to report for JMA 7 is more difficult. Even though this is not primarily a *T. murphyi* fishery, the use of Bayesian species composition estimates makes a marked difference to estimates of *T. murphyi* proportions in some years, even though the overall change is only -0.2% (Table 9). It is also unclear how appropriate it is to assume modelled fishing year species composition estimates for all months in each fishing year in a fishery that is strongly seasonal (Rohan et al. 2006). However, given the effort that has been put into Bayesian species composition modelling in JMA 7, the resulting reduction in uncertainty and the fact that New Zealand catch composition estimates for JMA 7 will use these modelled results, the monthly catch estimates for JMA 1 in Appendix C should probably be reported internationally.

Estimated New Zealand calendar year catches by jack mackerel species from 1986–2010 using the above recommended mixed approach are shown in Figure 8. The results are visually indistinguishable from those obtained using Bayesian estimates in both JMA 7 and pre-October 1994 in JMA 1 (Figure 6). Estimated catch proportions only change in JMA 3 over the years 1998–1993, with overall species proportions decreasing from 31.8% to 31.6% for JMN, decreasing from 40.1% to 40.0% for JMD and increasing from 28.2% to 28.4% for JMM. The largest change is a 9% increase in estimated JMM catch in JMA 3 in 1992, from 11661 t to 12664 t, between the two approaches.

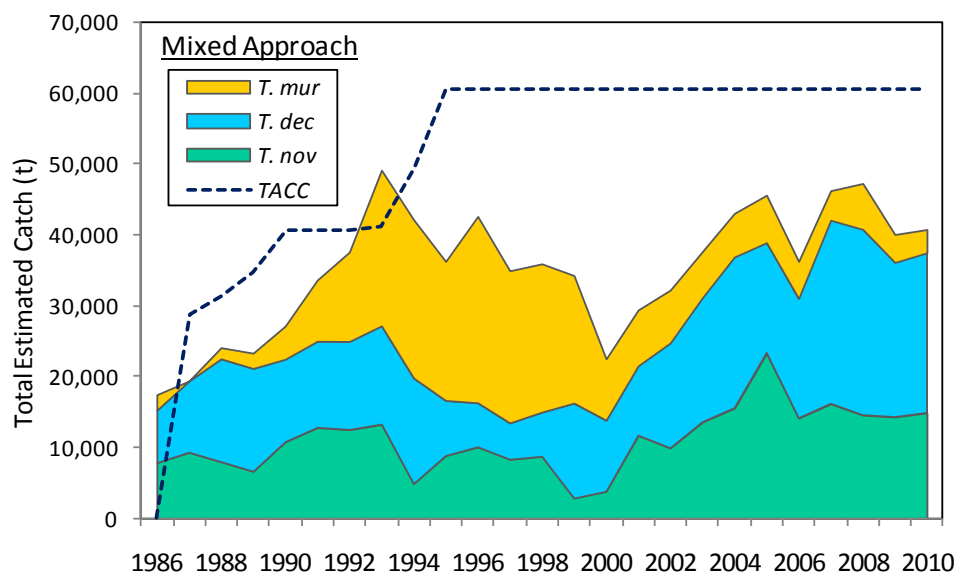


Figure 8: Estimated total New Zealand jack mackerel catch by species by calendar year, using monthly species proportions in areas JMA 1 and JMA 3, and Bayesian species composition estimates from Rohan et al. (2006) and Smith (2011) in area JMA 7, compared to total allowable commercial catch (TACC) limits for combined jack mackerel species, over the period 1986–2010.

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Appendix A

Estimated monthly species catch proportions of *Trachurus novaezelandiae* (JMN), *T. declivis* (JMD) and *T. murphyi* (JMM), and reported monthly catches of jack mackerel in New Zealand pelagic fisheries, by fisheries management area (JMA 1, JMA 3 and JMA 7) and month from October 1985 to December 2010. Shaded cells indicate months where missing monthly species proportions (where no sample or observer data were available) were substituted: **yellow** – catches apportioned to sub-areas; **orange** - used catch-weighted average calendar year species proportions; **blue** – substituted values from FMA 7.

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 1_198510	JMA 1	1985–86	1985	10	198510	407,034	0.84	0.16	0.00
JMA 1_198511	JMA 1	1985–86	1985	11	198511	77,055	0.84	0.16	0.00
JMA 1_198512	JMA 1	1985–86	1985	12	198512	123,611	0.84	0.16	0.00
JMA 1_198601	JMA 1	1985–86	1986	1	198601	91,372	0.84	0.16	0.00
JMA 1_198602	JMA 1	1985–86	1986	2	198602	1,476	0.84	0.16	0.00
JMA 1_198603	JMA 1	1985–86	1986	3	198603	2,769	0.84	0.16	0.00
JMA 1_198604	JMA 1	1985–86	1986	4	198604	893	0.84	0.16	0.00
JMA 1_198605	JMA 1	1985–86	1986	5	198605	2,584	0.84	0.16	0.00
JMA 1_198606	JMA 1	1985–86	1986	6	198606	134,147	0.84	0.16	0.00
JMA 1_198607	JMA 1	1985–86	1986	7	198607	13,045	0.84	0.16	0.00
JMA 1_198608	JMA 1	1985–86	1986	8	198608	316,995	0.84	0.16	0.00
JMA 1_198609	JMA 1	1985–86	1986	9	198609	204,369	0.84	0.16	0.00
JMA 1_198610	JMA 1	1986–87	1986	10	198610	179,398	0.84	0.16	0.00
JMA 1_198611	JMA 1	1986–87	1986	11	198611	613,839	0.84	0.16	0.00
JMA 1_198612	JMA 1	1986–87	1986	12	198612	1,129,668	0.84	0.16	0.00
JMA 1_198701	JMA 1	1986–87	1987	1	198701	252,521	0.84	0.16	0.00
JMA 1_198702	JMA 1	1986–87	1987	2	198702	225,185	0.84	0.16	0.00
JMA 1_198703	JMA 1	1986–87	1987	3	198703	190,181	0.84	0.16	0.00
JMA 1_198704	JMA 1	1986–87	1987	4	198704	400,941	0.84	0.16	0.00
JMA 1_198705	JMA 1	1986–87	1987	5	198705	306,890	0.84	0.16	0.00
JMA 1_198706	JMA 1	1986–87	1987	6	198706	353,218	0.84	0.16	0.00
JMA 1_198707	JMA 1	1986–87	1987	7	198707	25,016	0.84	0.16	0.00
JMA 1_198708	JMA 1	1986–87	1987	8	198708	115,953	0.84	0.16	0.00
JMA 1_198709	JMA 1	1986–87	1987	9	198709	263,189	0.84	0.16	0.00
JMA 1_198710	JMA 1	1987–88	1987	10	198710	196,821	0.84	0.16	0.00
JMA 1_198711	JMA 1	1987–88	1987	11	198711	314,547	0.84	0.16	0.00
JMA 1_198712	JMA 1	1987–88	1987	12	198712	328,870	0.84	0.16	0.00
JMA 1_198801	JMA 1	1987–88	1988	1	198801	12,707	0.84	0.16	0.00
JMA 1_198802	JMA 1	1987–88	1988	2	198802	24,084	0.84	0.16	0.00
JMA 1_198803	JMA 1	1987–88	1988	3	198803	7,037	0.84	0.16	0.00
JMA 1_198804	JMA 1	1987–88	1988	4	198804	6,868	0.84	0.16	0.00
JMA 1_198805	JMA 1	1987–88	1988	5	198805	138,379	0.84	0.16	0.00
JMA 1_198806	JMA 1	1987–88	1988	6	198806	660,688	0.84	0.16	0.00
JMA 1_198807	JMA 1	1987–88	1988	7	198807	506,669	0.84	0.16	0.00
JMA 1_198808	JMA 1	1987–88	1988	8	198808	269,255	0.84	0.16	0.00
JMA 1_198809	JMA 1	1987–88	1988	9	198809	642,075	0.84	0.16	0.00
JMA 1_198810	JMA 1	1988–89	1988	10	198810	334,572	0.84	0.16	0.00
JMA 1_198811	JMA 1	1988–89	1988	11	198811	441,739	0.84	0.16	0.00
JMA 1_198812	JMA 1	1988–89	1988	12	198812	170,012	0.84	0.16	0.00
JMA 1_198901	JMA 1	1988–89	1989	1	198901	6,965	0.76	0.14	0.10
JMA 1_198902	JMA 1	1988–89	1989	2	198902	9,556	0.76	0.14	0.10
JMA 1_198903	JMA 1	1988–89	1989	3	198903	11,524	0.76	0.14	0.10
JMA 1_198904	JMA 1	1988–89	1989	4	198904	9,677	0.76	0.14	0.10
JMA 1_198905	JMA 1	1988–89	1989	5	198905	375,364	0.76	0.14	0.10
JMA 1_198906	JMA 1	1988–89	1989	6	198906	183,737	0.76	0.14	0.10
JMA 1_198907	JMA 1	1988–89	1989	7	198907	651,133	0.76	0.14	0.10
JMA 1_198908	JMA 1	1988–89	1989	8	198908	178,848	0.76	0.14	0.10
JMA 1_198909	JMA 1	1988–89	1989	9	198909	612,873	0.76	0.14	0.10

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 1_198910	JMA 1	1989-90	1989	10	198910	934,949	0.76	0.14	0.10
JMA 1_198911	JMA 1	1989-90	1989	11	198911	710,930	0.76	0.14	0.10
JMA 1_198912	JMA 1	1989-90	1989	12	198912	51,896	0.76	0.14	0.10
JMA 1_199001	JMA 1	1989-90	1990	1	199001	102,227	0.84	0.16	0.00
JMA 1_199002	JMA 1	1989-90	1990	2	199002	18,477	0.84	0.16	0.00
JMA 1_199003	JMA 1	1989-90	1990	3	199003	66,953	0.84	0.16	0.00
JMA 1_199004	JMA 1	1989-90	1990	4	199004	17,540	0.84	0.16	0.00
JMA 1_199005	JMA 1	1989-90	1990	5	199005	191,841	0.84	0.16	0.00
JMA 1_199006	JMA 1	1989-90	1990	6	199006	71,219	0.84	0.16	0.00
JMA 1_199007	JMA 1	1989-90	1990	7	199007	281,964	0.84	0.16	0.00
JMA 1_199008	JMA 1	1989-90	1990	8	199008	1,162,814	0.84	0.16	0.00
JMA 1_199009	JMA 1	1989-90	1990	9	199009	615,191	0.84	0.16	0.00
JMA 1_199010	JMA 1	1990-91	1990	10	199010	598,984	0.84	0.16	0.00
JMA 1_199011	JMA 1	1990-91	1990	11	199011	698,904	0.84	0.16	0.00
JMA 1_199012	JMA 1	1990-91	1990	12	199012	747,027	0.84	0.16	0.00
JMA 1_199101	JMA 1	1990-91	1991	1	199101	18,536	0.72	0.14	0.14
JMA 1_199102	JMA 1	1990-91	1991	2	199102	20,624	0.72	0.14	0.14
JMA 1_199103	JMA 1	1990-91	1991	3	199103	7,586	0.72	0.14	0.14
JMA 1_199104	JMA 1	1990-91	1991	4	199104	421,347	0.72	0.14	0.14
JMA 1_199105	JMA 1	1990-91	1991	5	199105	941,144	0.72	0.14	0.14
JMA 1_199106	JMA 1	1990-91	1991	6	199106	1,340,509	0.72	0.14	0.14
JMA 1_199107	JMA 1	1990-91	1991	7	199107	472,072	0.72	0.14	0.14
JMA 1_199108	JMA 1	1990-91	1991	8	199108	612,500	0.72	0.14	0.14
JMA 1_199109	JMA 1	1990-91	1991	9	199109	592,765	0.72	0.14	0.14
JMA 1_199110	JMA 1	1991-92	1991	10	199110	262,432	0.72	0.14	0.14
JMA 1_199111	JMA 1	1991-92	1991	11	199111	400,683	0.72	0.14	0.14
JMA 1_199112	JMA 1	1991-92	1991	12	199112	718,177	0.72	0.14	0.14
JMA 1_199201	JMA 1	1991-92	1992	1	199201	632,604	0.54	0.10	0.36
JMA 1_199202	JMA 1	1991-92	1992	2	199202	777,411	0.54	0.10	0.36
JMA 1_199203	JMA 1	1991-92	1992	3	199203	395,772	0.54	0.10	0.36
JMA 1_199204	JMA 1	1991-92	1992	4	199204	1,422,018	0.54	0.10	0.36
JMA 1_199205	JMA 1	1991-92	1992	5	199205	251,194	0.54	0.10	0.36
JMA 1_199206	JMA 1	1991-92	1992	6	199206	16,934	0.54	0.10	0.36
JMA 1_199207	JMA 1	1991-92	1992	7	199207	957,294	0.54	0.10	0.36
JMA 1_199208	JMA 1	1991-92	1992	8	199208	608,363	0.54	0.10	0.36
JMA 1_199209	JMA 1	1991-92	1992	9	199209	574,117	0.54	0.10	0.36
JMA 1_199210	JMA 1	1992-93	1992	10	199210	232,906	0.54	0.10	0.36
JMA 1_199211	JMA 1	1992-93	1992	11	199211	315,062	0.54	0.10	0.36
JMA 1_199212	JMA 1	1992-93	1992	12	199212	744,073	0.54	0.10	0.36
JMA 1_199301	JMA 1	1992-93	1993	1	199301	569,054	0.57	0.11	0.32
JMA 1_199302	JMA 1	1992-93	1993	2	199302	354,923	0.57	0.11	0.32
JMA 1_199303	JMA 1	1992-93	1993	3	199303	174,394	0.57	0.11	0.32
JMA 1_199304	JMA 1	1992-93	1993	4	199304	516,550	0.57	0.11	0.32
JMA 1_199305	JMA 1	1992-93	1993	5	199305	967,574	0.57	0.11	0.32
JMA 1_199306	JMA 1	1992-93	1993	6	199306	738,327	0.57	0.11	0.32
JMA 1_199307	JMA 1	1992-93	1993	7	199307	494,594	0.57	0.11	0.32
JMA 1_199308	JMA 1	1992-93	1993	8	199308	103,602	0.57	0.11	0.32
JMA 1_199309	JMA 1	1992-93	1993	9	199309	2,317,942	0.57	0.11	0.32
JMA 1_199310	JMA 1	1993-94	1993	10	199310	1,455,125	0.57	0.11	0.32
JMA 1_199311	JMA 1	1993-94	1993	11	199311	1,283,487	0.57	0.11	0.32
JMA 1_199312	JMA 1	1993-94	1993	12	199312	701,418	0.57	0.11	0.32
JMA 1_199401	JMA 1	1993-94	1994	1	199401	587,000	0.05	0.19	0.76
JMA 1_199402	JMA 1	1993-94	1994	2	199402	92,464	0.05	0.19	0.76
JMA 1_199403	JMA 1	1993-94	1994	3	199403	365,110	0.05	0.19	0.76
JMA 1_199404	JMA 1	1993-94	1994	4	199404	246,312	0.05	0.19	0.76
JMA 1_199405	JMA 1	1993-94	1994	5	199405	548,608	0.05	0.19	0.76
JMA 1_199406	JMA 1	1993-94	1994	6	199406	1,032,254	0.05	0.19	0.76
JMA 1_199407	JMA 1	1993-94	1994	7	199407	1,787,474	0.05	0.19	0.76
JMA 1_199408	JMA 1	1993-94	1994	8	199408	3,063,899	0.05	0.19	0.76
JMA 1_199409	JMA 1	1993-94	1994	9	199409	3,092,849	0.05	0.19	0.76

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 1_199410	JMA 1	1994-95	1994	10	199410	218,726	0.00	0.71	0.29
JMA 1_199411	JMA 1	1994-95	1994	11	199411	1,070,201	0.00	0.12	0.88
JMA 1_199412	JMA 1	1994-95	1994	12	199412	889,065	0.12	0.15	0.73
JMA 1_199501	JMA 1	1994-95	1995	1	199501	702,737	0.26	0.20	0.54
JMA 1_199502	JMA 1	1994-95	1995	2	199502	435,793	0.57	0.07	0.36
JMA 1_199503	JMA 1	1994-95	1995	3	199503	329,026	0.99	0.01	0.00
JMA 1_199504	JMA 1	1994-95	1995	4	199504	106,791	1.00	0.00	0.00
JMA 1_199505	JMA 1	1994-95	1995	5	199505	184,146	1.00	0.00	0.00
JMA 1_199506	JMA 1	1994-95	1995	6	199506	589,151	1.00	0.00	0.00
JMA 1_199507	JMA 1	1994-95	1995	7	199507	359,473	1.00	0.00	0.00
JMA 1_199508	JMA 1	1994-95	1995	8	199508	1,961,513	0.02	0.24	0.74
JMA 1_199509	JMA 1	1994-95	1995	9	199509	985,377	0.66	0.06	0.28
JMA 1_199510	JMA 1	1995-96	1995	10	199510	526,192	0.38	0.17	0.45
JMA 1_199511	JMA 1	1995-96	1995	11	199511	86,013	0.65	0.15	0.20
JMA 1_199512	JMA 1	1995-96	1995	12	199512	126,027	0.97	0.02	0.01
JMA 1_199601	JMA 1	1995-96	1996	1	199601	22,143	1.00	0.00	0.00
JMA 1_199602	JMA 1	1995-96	1996	2	199602	110,793	1.00	0.00	0.00
JMA 1_199603	JMA 1	1995-96	1996	3	199603	59,477	0.98	0.00	0.02
JMA 1_199604	JMA 1	1995-96	1996	4	199604	176,385	0.87	0.13	0.00
JMA 1_199605	JMA 1	1995-96	1996	5	199605	185,602	0.00	0.26	0.74
JMA 1_199606	JMA 1	1995-96	1996	6	199606	691,769	0.82	0.00	0.18
JMA 1_199607	JMA 1	1995-96	1996	7	199607	1,297,446	0.88	0.00	0.12
JMA 1_199608	JMA 1	1995-96	1996	8	199608	1,746,737	1.00	0.00	0.00
JMA 1_199609	JMA 1	1995-96	1996	9	199609	1,845,416	0.99	0.00	0.01
JMA 1_199610	JMA 1	1996-97	1996	10	199610	666,764	0.45	0.03	0.52
JMA 1_199611	JMA 1	1996-97	1996	11	199611	198,988	0.44	0.18	0.38
JMA 1_199612	JMA 1	1996-97	1996	12	199612	101,495	0.77	0.02	0.21
JMA 1_199701	JMA 1	1996-97	1997	1	199701	42,966	0.92	0.08	0.00
JMA 1_199702	JMA 1	1996-97	1997	2	199702	17,042	0.58	0.05	0.37
JMA 1_199703	JMA 1	1996-97	1997	3	199703	19,728	0.58	0.05	0.37
JMA 1_199704	JMA 1	1996-97	1997	4	199704	151,111	1.00	0.00	0.00
JMA 1_199705	JMA 1	1996-97	1997	5	199705	301,789	1.00	0.00	0.00
JMA 1_199706	JMA 1	1996-97	1997	6	199706	515,069	1.00	0.00	0.00
JMA 1_199707	JMA 1	1996-97	1997	7	199707	1,635,108	0.77	0.01	0.22
JMA 1_199708	JMA 1	1996-97	1997	8	199708	1,899,633	0.65	0.01	0.34
JMA 1_199709	JMA 1	1996-97	1997	9	199709	1,362,307	0.55	0.18	0.27
JMA 1_199710	JMA 1	1997-98	1997	10	199710	1,494,295	0.40	0.05	0.55
JMA 1_199711	JMA 1	1997-98	1997	11	199711	212,065	0.67	0.26	0.07
JMA 1_199712	JMA 1	1997-98	1997	12	199712	1,216,478	0.11	0.02	0.87
JMA 1_199801	JMA 1	1997-98	1998	1	199801	14,982	0.55	0.09	0.36
JMA 1_199802	JMA 1	1997-98	1998	2	199802	18,534	0.55	0.09	0.36
JMA 1_199803	JMA 1	1997-98	1998	3	199803	27,356	0.55	0.09	0.36
JMA 1_199804	JMA 1	1997-98	1998	4	199804	154,867	1.00	0.00	0.00
JMA 1_199805	JMA 1	1997-98	1998	5	199805	55,871	0.00	0.11	0.89
JMA 1_199806	JMA 1	1997-98	1998	6	199806	436,194	1.00	0.00	0.00
JMA 1_199807	JMA 1	1997-98	1998	7	199807	88,682	1.00	0.00	0.00
JMA 1_199808	JMA 1	1997-98	1998	8	199808	1,103,556	0.12	0.08	0.80
JMA 1_199809	JMA 1	1997-98	1998	9	199809	2,872,120	0.80	0.04	0.16
JMA 1_199810	JMA 1	1998-99	1998	10	199810	2,100,410	0.38	0.15	0.47
JMA 1_199811	JMA 1	1998-99	1998	11	199811	629,850	0.24	0.21	0.55
JMA 1_199812	JMA 1	1998-99	1998	12	199812	105,337	0.96	0.00	0.04
JMA 1_199901	JMA 1	1998-99	1999	1	199901	25,645	0.73	0.12	0.15
JMA 1_199902	JMA 1	1998-99	1999	2	199902	38,165	0.73	0.12	0.15
JMA 1_199903	JMA 1	1998-99	1999	3	199903	40,392	0.73	0.12	0.15
JMA 1_199904	JMA 1	1998-99	1999	4	199904	25,312	0.00	0.69	0.31
JMA 1_199905	JMA 1	1998-99	1999	5	199905	86,942	0.73	0.12	0.15
JMA 1_199906	JMA 1	1998-99	1999	6	199906	929,133	0.48	0.19	0.33
JMA 1_199907	JMA 1	1998-99	1999	7	199907	598,341	0.98	0.02	0.00
JMA 1_199908	JMA 1	1998-99	1999	8	199908	702,205	0.95	0.03	0.02
JMA 1_199909	JMA 1	1998-99	1999	9	199909	485,270	1.00	0.00	0.00

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 1_199910	JMA 1	1999-00	1999	10	199910	415,552	0.15	0.36	0.49
JMA 1_199911	JMA 1	1999-00	1999	11	199911	130,085	0.88	0.11	0.01
JMA 1_199912	JMA 1	1999-00	1999	12	199912	156,592	0.92	0.08	0.00
JMA 1_200001	JMA 1	1999-00	2000	1	200001	10,140	0.94	0.04	0.02
JMA 1_200002	JMA 1	1999-00	2000	2	200002	31,026	1.00	0.00	0.00
JMA 1_200003	JMA 1	1999-00	2000	3	200003	23,335	0.00	0.00	1.00
JMA 1_200004	JMA 1	1999-00	2000	4	200004	72,794	0.94	0.04	0.02
JMA 1_200005	JMA 1	1999-00	2000	5	200005	138,031	0.94	0.04	0.02
JMA 1_200006	JMA 1	1999-00	2000	6	200006	240,660	1.00	0.00	0.00
JMA 1_200007	JMA 1	1999-00	2000	7	200007	10,279	0.94	0.04	0.02
JMA 1_200008	JMA 1	1999-00	2000	8	200008	347,415	1.00	0.00	0.00
JMA 1_200009	JMA 1	1999-00	2000	9	200009	1,290,090	1.00	0.00	0.00
JMA 1_200010	JMA 1	2000-01	2000	10	200010	304,733	1.00	0.00	0.00
JMA 1_200011	JMA 1	2000-01	2000	11	200011	406,559	0.74	0.14	0.12
JMA 1_200012	JMA 1	2000-01	2000	12	200012	344,475	0.81	0.19	0.00
JMA 1_200101	JMA 1	2000-01	2001	1	200101	416,703	1.00	0.00	0.00
JMA 1_200102	JMA 1	2000-01	2001	2	200102	214,684	1.00	0.00	0.00
JMA 1_200103	JMA 1	2000-01	2001	3	200103	183,030	1.00	0.00	0.00
JMA 1_200104	JMA 1	2000-01	2001	4	200104	14,422	0.95	0.04	0.01
JMA 1_200105	JMA 1	2000-01	2001	5	200105	32,669	0.95	0.04	0.01
JMA 1_200106	JMA 1	2000-01	2001	6	200106	1,064,041	1.00	0.00	0.00
JMA 1_200107	JMA 1	2000-01	2001	7	200107	1,310,692	1.00	0.00	0.00
JMA 1_200108	JMA 1	2000-01	2001	8	200108	1,935,557	1.00	0.00	0.00
JMA 1_200109	JMA 1	2000-01	2001	9	200109	2,132,436	0.95	0.03	0.02
JMA 1_200110	JMA 1	2001-02	2001	10	200110	439,071	0.37	0.56	0.07
JMA 1_200111	JMA 1	2001-02	2001	11	200111	107,920	0.71	0.29	0.00
JMA 1_200112	JMA 1	2001-02	2001	12	200112	498,964	1.00	0.00	0.00
JMA 1_200201	JMA 1	2001-02	2002	1	200201	32,381	1.00	0.00	0.00
JMA 1_200202	JMA 1	2001-02	2002	2	200202	14,938	1.00	0.00	0.00
JMA 1_200203	JMA 1	2001-02	2002	3	200203	181,041	0.00	1.00	0.00
JMA 1_200204	JMA 1	2001-02	2002	4	200204	411,751	0.07	0.93	0.00
JMA 1_200205	JMA 1	2001-02	2002	5	200205	194,023	0.39	0.59	0.02
JMA 1_200206	JMA 1	2001-02	2002	6	200206	464,153	1.00	0.00	0.00
JMA 1_200207	JMA 1	2001-02	2002	7	200207	961,571	1.00	0.00	0.00
JMA 1_200208	JMA 1	2001-02	2002	8	200208	421,532	1.00	0.00	0.00
JMA 1_200209	JMA 1	2001-02	2002	9	200209	1,519,656	1.00	0.00	0.00
JMA 1_200210	JMA 1	2002-03	2002	10	200210	717,596	0.12	0.87	0.01
JMA 1_200211	JMA 1	2002-03	2002	11	200211	437,546	0.33	0.61	0.06
JMA 1_200212	JMA 1	2002-03	2002	12	200212	279,245	0.44	0.53	0.03
JMA 1_200301	JMA 1	2002-03	2003	1	200301	352,877	0.83	0.15	0.02
JMA 1_200302	JMA 1	2002-03	2003	2	200302	712,209	0.95	0.05	0.00
JMA 1_200303	JMA 1	2002-03	2003	3	200303	36,129	1.00	0.00	0.00
JMA 1_200304	JMA 1	2002-03	2003	4	200304	35,057	0.10	0.90	0.00
JMA 1_200305	JMA 1	2002-03	2003	5	200305	210,336	0.07	0.75	0.18
JMA 1_200306	JMA 1	2002-03	2003	6	200306	171,262	1.00	0.00	0.00
JMA 1_200307	JMA 1	2002-03	2003	7	200307	891,959	1.00	0.00	0.00
JMA 1_200308	JMA 1	2002-03	2003	8	200308	338,720	1.00	0.00	0.00
JMA 1_200309	JMA 1	2002-03	2003	9	200309	1,989,063	1.00	0.00	0.00
JMA 1_200310	JMA 1	2003-04	2003	10	200310	257,928	0.87	0.13	0.00
JMA 1_200311	JMA 1	2003-04	2003	11	200311	306,973	0.12	0.83	0.05
JMA 1_200312	JMA 1	2003-04	2003	12	200312	844,313	0.52	0.40	0.08
JMA 1_200401	JMA 1	2003-04	2004	1	200401	101,806	1.00	0.00	0.00
JMA 1_200402	JMA 1	2003-04	2004	2	200402	76,428	1.00	0.00	0.00
JMA 1_200403	JMA 1	2003-04	2004	3	200403	136,539	1.00	0.00	0.00
JMA 1_200404	JMA 1	2003-04	2004	4	200404	248,479	1.00	0.00	0.00
JMA 1_200405	JMA 1	2003-04	2004	5	200405	1,637,921	0.95	0.05	0.00
JMA 1_200406	JMA 1	2003-04	2004	6	200406	742,769	1.00	0.00	0.00
JMA 1_200407	JMA 1	2003-04	2004	7	200407	191,233	1.00	0.00	0.00
JMA 1_200408	JMA 1	2003-04	2004	8	200408	168,969	0.00	0.98	0.02
JMA 1_200409	JMA 1	2003-04	2004	9	200409	2,682,641	0.05	0.77	0.18

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 1_200410	JMA 1	2004-05	2004	10	200410	950,816	0.41	0.38	0.21
JMA 1_200411	JMA 1	2004-05	2004	11	200411	1,551,107	0.39	0.37	0.24
JMA 1_200412	JMA 1	2004-05	2004	12	200412	106,318	0.62	0.38	0.00
JMA 1_200501	JMA 1	2004-05	2005	1	200501	394,696	0.99	0.01	0.00
JMA 1_200502	JMA 1	2004-05	2005	2	200502	240,227	1.00	0.00	0.00
JMA 1_200503	JMA 1	2004-05	2005	3	200503	96,870	1.00	0.00	0.00
JMA 1_200504	JMA 1	2004-05	2005	4	200504	58,347	1.00	0.00	0.00
JMA 1_200505	JMA 1	2004-05	2005	5	200505	393,801	1.00	0.00	0.00
JMA 1_200506	JMA 1	2004-05	2005	6	200506	875,664	1.00	0.00	0.00
JMA 1_200507	JMA 1	2004-05	2005	7	200507	73,631	1.00	0.00	0.00
JMA 1_200508	JMA 1	2004-05	2005	8	200508	1,511,265	1.00	0.00	0.00
JMA 1_200509	JMA 1	2004-05	2005	9	200509	3,165,259	1.00	0.00	0.00
JMA 1_200510	JMA 1	2005-06	2005	10	200510	1,471,842	1.00	0.00	0.00
JMA 1_200511	JMA 1	2005-06	2005	11	200511	1,875,873	0.98	0.02	0.00
JMA 1_200512	JMA 1	2005-06	2005	12	200512	505,553	1.00	0.00	0.00
JMA 1_200601	JMA 1	2005-06	2006	1	200601	267,994	0.75	0.25	0.00
JMA 1_200602	JMA 1	2005-06	2006	2	200602	61,740	0.75	0.25	0.00
JMA 1_200603	JMA 1	2005-06	2006	3	200603	336,928	0.75	0.25	0.00
JMA 1_200604	JMA 1	2005-06	2006	4	200604	700,642	0.75	0.25	0.00
JMA 1_200605	JMA 1	2005-06	2006	5	200605	261,012	0.75	0.25	0.00
JMA 1_200606	JMA 1	2005-06	2006	6	200606	1,310,103	0.75	0.25	0.00
JMA 1_200607	JMA 1	2005-06	2006	7	200607	735,421	0.00	0.99	0.01
JMA 1_200608	JMA 1	2005-06	2006	8	200608	1,426,804	1.00	0.00	0.00
JMA 1_200609	JMA 1	2005-06	2006	9	200609	970,088	0.99	0.00	0.01
JMA 1_200610	JMA 1	2006-07	2006	10	200610	157,046	0.77	0.23	0.00
JMA 1_200611	JMA 1	2006-07	2006	11	200611	451,460	0.19	0.81	0.00
JMA 1_200612	JMA 1	2006-07	2006	12	200612	730,271	1.00	0.00	0.00
JMA 1_200701	JMA 1	2006-07	2007	1	200701	214,590	0.77	0.17	0.06
JMA 1_200702	JMA 1	2006-07	2007	2	200702	278,616	0.77	0.17	0.06
JMA 1_200703	JMA 1	2006-07	2007	3	200703	248,494	0.77	0.17	0.06
JMA 1_200704	JMA 1	2006-07	2007	4	200704	628,647	0.77	0.17	0.06
JMA 1_200705	JMA 1	2006-07	2007	5	200705	191,038	0.77	0.17	0.06
JMA 1_200706	JMA 1	2006-07	2007	6	200706	464,846	0.77	0.17	0.06
JMA 1_200707	JMA 1	2006-07	2007	7	200707	359,121	0.77	0.17	0.06
JMA 1_200708	JMA 1	2006-07	2007	8	200708	13,562	0.77	0.17	0.06
JMA 1_200709	JMA 1	2006-07	2007	9	200709	1,555,310	0.14	0.63	0.23
JMA 1_200710	JMA 1	2007-08	2007	10	200710	1,267,543	1.00	0.00	0.00
JMA 1_200711	JMA 1	2007-08	2007	11	200711	2,810,868	0.98	0.02	0.00
JMA 1_200712	JMA 1	2007-08	2007	12	200712	575,930	1.00	0.00	0.00
JMA 1_200801	JMA 1	2007-08	2008	1	200801	164,157	0.47	0.40	0.13
JMA 1_200802	JMA 1	2007-08	2008	2	200802	83,537	0.47	0.40	0.13
JMA 1_200803	JMA 1	2007-08	2008	3	200803	7,642	0.47	0.40	0.13
JMA 1_200804	JMA 1	2007-08	2008	4	200804	185,565	0.47	0.40	0.13
JMA 1_200805	JMA 1	2007-08	2008	5	200805	517,604	0.47	0.40	0.13
JMA 1_200806	JMA 1	2007-08	2008	6	200806	1,272,987	0.47	0.40	0.13
JMA 1_200807	JMA 1	2007-08	2008	7	200807	554,740	0.47	0.40	0.13
JMA 1_200808	JMA 1	2007-08	2008	8	200808	111,896	0.47	0.40	0.13
JMA 1_200809	JMA 1	2007-08	2008	9	200809	3,614,531	0.38	0.59	0.03
JMA 1_200810	JMA 1	2008-09	2008	10	200810	3,104,904	0.57	0.18	0.25
JMA 1_200811	JMA 1	2008-09	2008	11	200811	1,099,064	0.47	0.40	0.13
JMA 1_200812	JMA 1	2008-09	2008	12	200812	2,871,376	0.47	0.40	0.13
JMA 1_200901	JMA 1	2008-09	2009	1	200901	19,170	1.00	0.00	0.00
JMA 1_200902	JMA 1	2008-09	2009	2	200902	16,222	1.00	0.00	0.00
JMA 1_200903	JMA 1	2008-09	2009	3	200903	11,229	1.00	0.00	0.00
JMA 1_200904	JMA 1	2008-09	2009	4	200904	15,557	1.00	0.00	0.00
JMA 1_200905	JMA 1	2008-09	2009	5	200905	39,246	1.00	0.00	0.00
JMA 1_200906	JMA 1	2008-09	2009	6	200906	274,976	1.00	0.00	0.00
JMA 1_200907	JMA 1	2008-09	2009	7	200907	856,617	1.00	0.00	0.00
JMA 1_200908	JMA 1	2008-09	2009	8	200908	437,167	1.00	0.00	0.00
JMA 1_200909	JMA 1	2008-09	2009	9	200909	1,045,471	1.00	0.00	0.00

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 1_200910	JMA 1	2009-10	2009	10	200910	2,782,366	1.00	0.00	0.00
JMA 1_200911	JMA 1	2009-10	2009	11	200911	152,039	1.00	0.00	0.00
JMA 1_200912	JMA 1	2009-10	2009	12	200912	1,825,510	1.00	0.00	0.00
JMA 1_201001	JMA 1	2009-10	2010	1	201001	22,425	1.00	0.00	0.00
JMA 1_201002	JMA 1	2009-10	2010	2	201002	212,089	1.00	0.00	0.00
JMA 1_201003	JMA 1	2009-10	2010	3	201003	329,083	1.00	0.00	0.00
JMA 1_201004	JMA 1	2009-10	2010	4	201004	171,129	1.00	0.00	0.00
JMA 1_201005	JMA 1	2009-10	2010	5	201005	463,122	1.00	0.00	0.00
JMA 1_201006	JMA 1	2009-10	2010	6	201006	30,858	1.00	0.00	0.00
JMA 1_201007	JMA 1	2009-10	2010	7	201007	1,481,143	1.00	0.00	0.00
JMA 1_201008	JMA 1	2009-10	2010	8	201008	860,116	1.00	0.00	0.00
JMA 1_201009	JMA 1	2009-10	2010	9	201009	756,052	1.00	0.00	0.00
JMA 1_201010	JMA 1	2010-11	2010	10	201010	2,741,912	1.00	0.00	0.00
JMA 1_201011	JMA 1	2010-11	2010	11	201011	2,176,608	1.00	0.00	0.00
JMA 1_201012	JMA 1	2010-11	2010	12	201012	617,393	1.00	0.00	0.00
JMA 3_198510	JMA 3	1985-86	1985	10	198510	45,058	0.00	0.00	1.00
JMA 3_198511	JMA 3	1985-86	1985	11	198511	216,569	0.00	0.00	1.00
JMA 3_198512	JMA 3	1985-86	1985	12	198512	105,275	0.00	0.00	1.00
JMA 3_198601	JMA 3	1985-86	1986	1	198601	69,066	0.00	0.00	1.00
JMA 3_198602	JMA 3	1985-86	1986	2	198602	197,542	0.00	0.00	1.00
JMA 3_198603	JMA 3	1985-86	1986	3	198603	331,735	0.00	0.00	1.00
JMA 3_198604	JMA 3	1985-86	1986	4	198604	522,258	0.00	0.00	1.00
JMA 3_198605	JMA 3	1985-86	1986	5	198605	376,471	0.00	0.00	1.00
JMA 3_198606	JMA 3	1985-86	1986	6	198606	420,174	0.00	0.00	1.00
JMA 3_198607	JMA 3	1985-86	1986	7	198607	8,917	0.00	0.00	1.00
JMA 3_198608	JMA 3	1985-86	1986	8	198608	1,667	0.00	0.00	1.00
JMA 3_198609	JMA 3	1985-86	1986	9	198609	28,702	0.00	0.00	1.00
JMA 3_198610	JMA 3	1986-87	1986	10	198610	75,189	0.00	0.00	1.00
JMA 3_198611	JMA 3	1986-87	1986	11	198611	84,144	0.00	0.00	1.00
JMA 3_198612	JMA 3	1986-87	1986	12	198612	89,990	0.00	0.00	1.00
JMA 3_198701	JMA 3	1986-87	1987	1	198701	23,381	0.21	0.79	0.00
JMA 3_198702	JMA 3	1986-87	1987	2	198702	147,266	0.21	0.79	0.00
JMA 3_198703	JMA 3	1986-87	1987	3	198703	247,806	0.23	0.77	0.00
JMA 3_198704	JMA 3	1986-87	1987	4	198704	391,178	0.21	0.79	0.00
JMA 3_198705	JMA 3	1986-87	1987	5	198705	232,109	0.21	0.79	0.00
JMA 3_198706	JMA 3	1986-87	1987	6	198706	178,934	0.22	0.78	0.00
JMA 3_198707	JMA 3	1986-87	1987	7	198707	1,819	0.21	0.79	0.00
JMA 3_198708	JMA 3	1986-87	1987	8	198708	785	0.21	0.79	0.00
JMA 3_198709	JMA 3	1986-87	1987	9	198709	165,398	0.21	0.79	0.00
JMA 3_198710	JMA 3	1987-88	1987	10	198710	130	0.21	0.79	0.00
JMA 3_198711	JMA 3	1987-88	1987	11	198711	98,051	0.21	0.79	0.00
JMA 3_198712	JMA 3	1987-88	1987	12	198712	138,340	0.21	0.79	0.00
JMA 3_198801	JMA 3	1987-88	1988	1	198801	507,110	0.02	0.19	0.79
JMA 3_198802	JMA 3	1987-88	1988	2	198802	500,975	0.02	0.19	0.79
JMA 3_198803	JMA 3	1987-88	1988	3	198803	133,901	0.02	0.19	0.79
JMA 3_198804	JMA 3	1987-88	1988	4	198804	101,124	0.02	0.19	0.79
JMA 3_198805	JMA 3	1987-88	1988	5	198805	172,130	0.02	0.19	0.79
JMA 3_198806	JMA 3	1987-88	1988	6	198806	146,407	0.02	0.19	0.79
JMA 3_198807	JMA 3	1987-88	1988	7	198807	79,732	0.02	0.19	0.79
JMA 3_198808	JMA 3	1987-88	1988	8	198808	1,336	0.02	0.19	0.79
JMA 3_198809	JMA 3	1987-88	1988	9	198809	3,765	0.02	0.19	0.79
JMA 3_198810	JMA 3	1988-89	1988	10	198810	51,789	0.02	0.19	0.79
JMA 3_198811	JMA 3	1988-89	1988	11	198811	148,588	0.02	0.19	0.79
JMA 3_198812	JMA 3	1988-89	1988	12	198812	113,695	0.02	0.19	0.79
JMA 3_198901	JMA 3	1988-89	1989	1	198901	6,871	0.00	0.12	0.88
JMA 3_198902	JMA 3	1988-89	1989	2	198902	263,652	0.00	0.00	1.00
JMA 3_198903	JMA 3	1988-89	1989	3	198903	267,785	0.00	0.12	0.88
JMA 3_198904	JMA 3	1988-89	1989	4	198904	346,332	0.00	0.12	0.88
JMA 3_198905	JMA 3	1988-89	1989	5	198905	552,427	0.00	0.12	0.88
JMA 3_198906	JMA 3	1988-89	1989	6	198906	129,417	0.00	0.12	0.88

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 3_198907	JMA 3	1988-89	1989	7	198907	26,432	0.00	0.12	0.88
JMA 3_198908	JMA 3	1988-89	1989	8	198908	745	0.00	0.12	0.88
JMA 3_198909	JMA 3	1988-89	1989	9	198909	11,267	0.00	0.12	0.88
JMA 3_198910	JMA 3	1989-90	1989	10	198910	12,651	0.00	0.12	0.88
JMA 3_198911	JMA 3	1989-90	1989	11	198911	165,313	0.00	0.30	0.70
JMA 3_198912	JMA 3	1989-90	1989	12	198912	95,261	0.00	0.12	0.88
JMA 3_199001	JMA 3	1989-90	1990	1	199001	189,837	0.00	0.00	1.00
JMA 3_199002	JMA 3	1989-90	1990	2	199002	872,784	0.00	0.00	1.00
JMA 3_199003	JMA 3	1989-90	1990	3	199003	716,342	0.00	0.00	1.00
JMA 3_199004	JMA 3	1989-90	1990	4	199004	439,620	0.00	0.00	1.00
JMA 3_199005	JMA 3	1989-90	1990	5	199005	1,045,652	0.00	0.00	1.00
JMA 3_199006	JMA 3	1989-90	1990	6	199006	353,096	0.00	0.00	1.00
JMA 3_199007	JMA 3	1989-90	1990	7	199007	29,104	0.00	0.00	1.00
JMA 3_199008	JMA 3	1989-90	1990	8	199008	7,484	0.00	0.00	1.00
JMA 3_199009	JMA 3	1989-90	1990	9	199009	85,856	0.00	0.00	1.00
JMA 3_199010	JMA 3	1990-91	1990	10	199010	20,852	0.00	0.00	1.00
JMA 3_199011	JMA 3	1990-91	1990	11	199011	252,067	0.00	0.00	1.00
JMA 3_199012	JMA 3	1990-91	1990	12	199012	657,704	0.00	0.00	1.00
JMA 3_199101	JMA 3	1990-91	1991	1	199101	721,872	0.00	0.00	1.00
JMA 3_199102	JMA 3	1990-91	1991	2	199102	1,079,728	0.00	0.00	1.00
JMA 3_199103	JMA 3	1990-91	1991	3	199103	1,180,999	0.00	0.00	1.00
JMA 3_199104	JMA 3	1990-91	1991	4	199104	1,294,798	0.00	0.00	1.00
JMA 3_199105	JMA 3	1990-91	1991	5	199105	909,063	0.00	0.00	1.00
JMA 3_199106	JMA 3	1990-91	1991	6	199106	145,459	0.00	0.00	1.00
JMA 3_199107	JMA 3	1990-91	1991	7	199107	45,257	0.00	0.00	1.00
JMA 3_199108	JMA 3	1990-91	1991	8	199108	6,188	0.00	0.00	1.00
JMA 3_199109	JMA 3	1990-91	1991	9	199109	89,013	0.00	0.00	1.00
JMA 3_199110	JMA 3	1991-92	1991	10	199110	45,747	0.00	0.01	0.99
JMA 3_199111	JMA 3	1991-92	1991	11	199111	232,088	0.00	0.00	1.00
JMA 3_199112	JMA 3	1991-92	1991	12	199112	672,514	0.00	0.00	1.00
JMA 3_199201	JMA 3	1991-92	1992	1	199201	1,392,731	0.00	0.00	1.00
JMA 3_199202	JMA 3	1991-92	1992	2	199202	480,660	0.00	0.00	1.00
JMA 3_199203	JMA 3	1991-92	1992	3	199203	1,065,687	0.00	0.00	1.00
JMA 3_199204	JMA 3	1991-92	1992	4	199204	1,049,283	0.00	0.00	1.00
JMA 3_199205	JMA 3	1991-92	1992	5	199205	369,432	0.00	0.00	1.00
JMA 3_199206	JMA 3	1991-92	1992	6	199206	106,091	0.00	0.00	1.00
JMA 3_199207	JMA 3	1991-92	1992	7	199207	294,480	0.00	0.00	1.00
JMA 3_199208	JMA 3	1991-92	1992	8	199208	10,203	0.00	0.00	1.00
JMA 3_199209	JMA 3	1991-92	1992	9	199209	60,085	0.00	0.00	1.00
JMA 3_199210	JMA 3	1992-93	1992	10	199210	5,629	0.00	0.00	1.00
JMA 3_199211	JMA 3	1992-93	1992	11	199211	6,631	0.00	0.00	1.00
JMA 3_199212	JMA 3	1992-93	1992	12	199212	56,343	0.00	0.00	1.00
JMA 3_199301	JMA 3	1992-93	1993	1	199301	3,741,349	0.00	1.00	0.00
JMA 3_199302	JMA 3	1992-93	1993	2	199302	1,118,908	0.00	0.00	1.00
JMA 3_199303	JMA 3	1992-93	1993	3	199303	2,389,885	0.00	0.00	1.00
JMA 3_199304	JMA 3	1992-93	1993	4	199304	3,383,613	0.00	0.19	0.81
JMA 3_199305	JMA 3	1992-93	1993	5	199305	3,595,438	0.00	0.00	1.00
JMA 3_199306	JMA 3	1992-93	1993	6	199306	817,479	0.00	0.30	0.70
JMA 3_199307	JMA 3	1992-93	1993	7	199307	183,526	0.00	0.30	0.70
JMA 3_199308	JMA 3	1992-93	1993	8	199308	97,494	0.00	0.30	0.70
JMA 3_199309	JMA 3	1992-93	1993	9	199309	2,705	0.00	0.30	0.70
JMA 3_199310	JMA 3	1993-94	1993	10	199310	16,169	0.00	0.30	0.70
JMA 3_199311	JMA 3	1993-94	1993	11	199311	287,374	0.00	0.00	1.00
JMA 3_199312	JMA 3	1993-94	1993	12	199312	386,356	0.00	0.30	0.70
JMA 3_199401	JMA 3	1993-94	1994	1	199401	2,878,608	0.00	0.31	0.69
JMA 3_199402	JMA 3	1993-94	1994	2	199402	319,757	0.00	0.00	1.00
JMA 3_199403	JMA 3	1993-94	1994	3	199403	908,614	0.00	0.84	0.16
JMA 3_199404	JMA 3	1993-94	1994	4	199404	1,144,840	0.00	0.74	0.26
JMA 3_199405	JMA 3	1993-94	1994	5	199405	2,164,418	0.00	0.00	1.00
JMA 3_199406	JMA 3	1993-94	1994	6	199406	702,589	0.00	0.00	1.00

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 3_199407	JMA 3	1993-94	1994	7	199407	285,261	0.00	0.31	0.69
JMA 3_199408	JMA 3	1993-94	1994	8	199408	12,236	0.00	0.31	0.69
JMA 3_199409	JMA 3	1993-94	1994	9	199409	8,778	0.00	0.31	0.69
JMA 3_199410	JMA 3	1994-95	1994	10	199410	33,519	0.00	0.31	0.69
JMA 3_199411	JMA 3	1994-95	1994	11	199411	5,736	0.00	0.31	0.69
JMA 3_199412	JMA 3	1994-95	1994	12	199412	110,429	0.00	0.31	0.69
JMA 3_199501	JMA 3	1994-95	1995	1	199501	3,431,894	0.00	0.03	0.97
JMA 3_199502	JMA 3	1994-95	1995	2	199502	562,843	0.00	0.00	1.00
JMA 3_199503	JMA 3	1994-95	1995	3	199503	1,692,564	0.00	0.00	1.00
JMA 3_199504	JMA 3	1994-95	1995	4	199504	737,608	0.00	0.07	0.93
JMA 3_199505	JMA 3	1994-95	1995	5	199505	3,961,149	0.00	0.04	0.96
JMA 3_199506	JMA 3	1994-95	1995	6	199506	632,753	0.00	0.03	0.97
JMA 3_199507	JMA 3	1994-95	1995	7	199507	324,028	0.00	0.03	0.97
JMA 3_199508	JMA 3	1994-95	1995	8	199508	8,399	0.00	0.03	0.97
JMA 3_199509	JMA 3	1994-95	1995	9	199509	18,079	0.00	0.03	0.97
JMA 3_199510	JMA 3	1995-96	1995	10	199510	15,265	0.00	0.03	0.97
JMA 3_199511	JMA 3	1995-96	1995	11	199511	64,993	0.00	0.03	0.97
JMA 3_199512	JMA 3	1995-96	1995	12	199512	243,473	0.00	0.03	0.97
JMA 3_199601	JMA 3	1995-96	1996	1	199601	4,772,168	0.00	0.02	0.98
JMA 3_199602	JMA 3	1995-96	1996	2	199602	2,501,365	0.00	0.00	1.00
JMA 3_199603	JMA 3	1995-96	1996	3	199603	2,672,293	0.00	0.01	0.99
JMA 3_199604	JMA 3	1995-96	1996	4	199604	3,926,719	0.00	0.01	0.99
JMA 3_199605	JMA 3	1995-96	1996	5	199605	4,666,101	0.00	0.00	1.00
JMA 3_199606	JMA 3	1995-96	1996	6	199606	778,224	0.00	0.01	0.99
JMA 3_199607	JMA 3	1995-96	1996	7	199607	144,071	0.00	0.01	0.99
JMA 3_199608	JMA 3	1995-96	1996	8	199608	14,121	0.00	0.01	0.99
JMA 3_199609	JMA 3	1995-96	1996	9	199609	4,207	0.00	0.01	0.99
JMA 3_199610	JMA 3	1996-97	1996	10	199610	3,975	0.00	0.01	0.99
JMA 3_199611	JMA 3	1996-97	1996	11	199611	1,376,781	0.00	0.01	0.99
JMA 3_199612	JMA 3	1996-97	1996	12	199612	867,736	0.00	0.01	0.99
JMA 3_199701	JMA 3	1996-97	1997	1	199701	1,949,843	0.00	0.00	1.00
JMA 3_199702	JMA 3	1996-97	1997	2	199702	901,829	0.00	0.00	1.00
JMA 3_199703	JMA 3	1996-97	1997	3	199703	1,860,699	0.00	0.00	1.00
JMA 3_199704	JMA 3	1996-97	1997	4	199704	4,044,400	0.00	0.00	1.00
JMA 3_199705	JMA 3	1996-97	1997	5	199705	2,896,140	0.00	0.01	0.99
JMA 3_199706	JMA 3	1996-97	1997	6	199706	1,238,451	0.00	0.00	1.00
JMA 3_199707	JMA 3	1996-97	1997	7	199707	533,257	0.00	0.00	1.00
JMA 3_199708	JMA 3	1996-97	1997	8	199708	942	0.00	0.00	1.00
JMA 3_199709	JMA 3	1996-97	1997	9	199709	12,945	0.00	0.00	1.00
JMA 3_199710	JMA 3	1997-98	1997	10	199710	41,715	0.00	0.00	1.00
JMA 3_199711	JMA 3	1997-98	1997	11	199711	178,481	0.00	0.00	1.00
JMA 3_199712	JMA 3	1997-98	1997	12	199712	374,040	0.00	0.02	0.98
JMA 3_199801	JMA 3	1997-98	1998	1	199801	2,606,498	0.00	0.03	0.97
JMA 3_199802	JMA 3	1997-98	1998	2	199802	881,602	0.00	0.00	1.00
JMA 3_199803	JMA 3	1997-98	1998	3	199803	2,753,413	0.00	0.01	0.99
JMA 3_199804	JMA 3	1997-98	1998	4	199804	2,187,671	0.00	0.04	0.96
JMA 3_199805	JMA 3	1997-98	1998	5	199805	5,722,807	0.00	0.02	0.98
JMA 3_199806	JMA 3	1997-98	1998	6	199806	458,408	0.00	0.02	0.98
JMA 3_199807	JMA 3	1997-98	1998	7	199807	243,863	0.00	0.02	0.98
JMA 3_199808	JMA 3	1997-98	1998	8	199808	837	0.00	0.02	0.98
JMA 3_199809	JMA 3	1997-98	1998	9	199809	2,664	0.00	0.02	0.98
JMA 3_199810	JMA 3	1998-99	1998	10	199810	3,869	0.00	0.02	0.98
JMA 3_199811	JMA 3	1998-99	1998	11	199811	31,013	0.00	0.02	0.98
JMA 3_199812	JMA 3	1998-99	1998	12	199812	88,686	0.00	0.02	0.98
JMA 3_199901	JMA 3	1998-99	1999	1	199901	3,085,882	0.00	0.16	0.84
JMA 3_199902	JMA 3	1998-99	1999	2	199902	828,102	0.00	0.15	0.85
JMA 3_199903	JMA 3	1998-99	1999	3	199903	3,517,726	0.00	0.15	0.85
JMA 3_199904	JMA 3	1998-99	1999	4	199904	5,323,145	0.00	0.16	0.84
JMA 3_199905	JMA 3	1998-99	1999	5	199905	1,156,140	0.00	0.16	0.84
JMA 3_199906	JMA 3	1998-99	1999	6	199906	689,788	0.00	0.16	0.84

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA_3_199907	JMA_3	1998-99	1999	7	199907	350,498	0.00	0.16	0.84
JMA_3_199908	JMA_3	1998-99	1999	8	199908	2,598	0.00	0.16	0.84
JMA_3_199909	JMA_3	1998-99	1999	9	199909	33,552	0.00	0.16	0.84
JMA_3_199910	JMA_3	1999-00	1999	10	199910	29,463	0.00	0.16	0.84
JMA_3_199911	JMA_3	1999-00	1999	11	199911	213,221	0.00	0.16	0.84
JMA_3_199912	JMA_3	1999-00	1999	12	199912	694,627	0.00	0.16	0.84
JMA_3_200001	JMA_3	1999-00	2000	1	200001	1,495,276	0.01	0.53	0.46
JMA_3_200002	JMA_3	1999-00	2000	2	200002	2,026,152	0.00	0.05	0.95
JMA_3_200003	JMA_3	1999-00	2000	3	200003	1,175,031	0.10	0.40	0.50
JMA_3_200004	JMA_3	1999-00	2000	4	200004	3,546,464	0.00	1.00	0.00
JMA_3_200005	JMA_3	1999-00	2000	5	200005	1,033,262	0.00	0.00	1.00
JMA_3_200006	JMA_3	1999-00	2000	6	200006	56,344	0.00	0.00	1.00
JMA_3_200007	JMA_3	1999-00	2000	7	200007	13,632	0.01	0.53	0.46
JMA_3_200008	JMA_3	1999-00	2000	8	200008	606	0.01	0.53	0.46
JMA_3_200009	JMA_3	1999-00	2000	9	200009	21,923	0.01	0.53	0.46
JMA_3_200010	JMA_3	2000-01	2000	10	200010	24,141	0.00	1.00	0.00
JMA_3_200011	JMA_3	2000-01	2000	11	200011	287,077	0.01	0.53	0.46
JMA_3_200012	JMA_3	2000-01	2000	12	200012	25,296	0.01	0.53	0.46
JMA_3_200101	JMA_3	2000-01	2001	1	200101	409,344	0.00	0.00	1.00
JMA_3_200102	JMA_3	2000-01	2001	2	200102	102,736	0.00	0.00	1.00
JMA_3_200103	JMA_3	2000-01	2001	3	200103	256,965	0.00	0.21	0.79
JMA_3_200104	JMA_3	2000-01	2001	4	200104	795,162	0.00	0.35	0.65
JMA_3_200105	JMA_3	2000-01	2001	5	200105	751,146	0.00	0.00	1.00
JMA_3_200106	JMA_3	2000-01	2001	6	200106	32,644	0.00	0.14	0.86
JMA_3_200107	JMA_3	2000-01	2001	7	200107	14,867	0.00	0.14	0.86
JMA_3_200108	JMA_3	2000-01	2001	8	200108	740	0.00	0.14	0.86
JMA_3_200109	JMA_3	2000-01	2001	9	200109	43,883	0.00	0.00	1.00
JMA_3_200110	JMA_3	2001-02	2001	10	200110	19,834	0.00	0.42	0.58
JMA_3_200111	JMA_3	2001-02	2001	11	200111	138,473	0.00	0.14	0.86
JMA_3_200112	JMA_3	2001-02	2001	12	200112	14,577	0.00	0.14	0.86
JMA_3_200201	JMA_3	2001-02	2002	1	200201	188,699	0.01	0.18	0.81
JMA_3_200202	JMA_3	2001-02	2002	2	200202	585,548	0.04	0.32	0.64
JMA_3_200203	JMA_3	2001-02	2002	3	200203	626,991	0.00	0.53	0.47
JMA_3_200204	JMA_3	2001-02	2002	4	200204	1,002,770	0.00	0.25	0.75
JMA_3_200205	JMA_3	2001-02	2002	5	200205	2,148,505	0.00	0.00	1.00
JMA_3_200206	JMA_3	2001-02	2002	6	200206	237,179	0.01	0.18	0.81
JMA_3_200207	JMA_3	2001-02	2002	7	200207	6,180	0.01	0.18	0.81
JMA_3_200208	JMA_3	2001-02	2002	8	200208	612	0.01	0.18	0.81
JMA_3_200209	JMA_3	2001-02	2002	9	200209	30,632	0.01	0.18	0.81
JMA_3_200210	JMA_3	2002-03	2002	10	200210	36,008	0.01	0.18	0.81
JMA_3_200211	JMA_3	2002-03	2002	11	200211	36,410	0.01	0.18	0.81
JMA_3_200212	JMA_3	2002-03	2002	12	200212	35,776	0.00	0.00	1.00
JMA_3_200301	JMA_3	2002-03	2003	1	200301	57,303	0.00	0.00	1.00
JMA_3_200302	JMA_3	2002-03	2003	2	200302	18,764	0.00	0.00	1.00
JMA_3_200303	JMA_3	2002-03	2003	3	200303	161,372	0.00	0.03	0.97
JMA_3_200304	JMA_3	2002-03	2003	4	200304	1,094,750	0.00	0.86	0.14
JMA_3_200305	JMA_3	2002-03	2003	5	200305	682,882	0.00	0.70	0.30
JMA_3_200306	JMA_3	2002-03	2003	6	200306	60,662	0.00	0.70	0.30
JMA_3_200307	JMA_3	2002-03	2003	7	200307	29,170	0.00	0.70	0.30
JMA_3_200308	JMA_3	2002-03	2003	8	200308	675	0.00	0.70	0.30
JMA_3_200309	JMA_3	2002-03	2003	9	200309	11,229	0.00	0.00	1.00
JMA_3_200310	JMA_3	2003-04	2003	10	200310	11,611	0.00	0.70	0.30
JMA_3_200311	JMA_3	2003-04	2003	11	200311	10,762	0.00	0.70	0.30
JMA_3_200312	JMA_3	2003-04	2003	12	200312	4,804	0.00	0.70	0.30
JMA_3_200401	JMA_3	2003-04	2004	1	200401	21,474	0.00	0.06	0.94
JMA_3_200402	JMA_3	2003-04	2004	2	200402	39,973	0.00	0.19	0.81
JMA_3_200403	JMA_3	2003-04	2004	3	200403	80,664	0.00	0.00	1.00
JMA_3_200404	JMA_3	2003-04	2004	4	200404	198,666	0.00	0.06	0.94
JMA_3_200405	JMA_3	2003-04	2004	5	200405	297,852	0.00	0.06	0.94
JMA_3_200406	JMA_3	2003-04	2004	6	200406	18,512	0.00	0.06	0.94

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 3_200407	JMA 3	2003-04	2004	7	200407	2,040	0.00	0.06	0.94
JMA 3_200408	JMA 3	2003-04	2004	8	200408	25	0.00	0.06	0.94
JMA 3_200409	JMA 3	2003-04	2004	9	200409	18,617	0.00	0.06	0.94
JMA 3_200410	JMA 3	2004-05	2004	10	200410	5,665	0.00	0.06	0.94
JMA 3_200411	JMA 3	2004-05	2004	11	200411	8,108	0.00	0.06	0.94
JMA 3_200412	JMA 3	2004-05	2004	12	200412	428	0.00	0.06	0.94
JMA 3_200501	JMA 3	2004-05	2005	1	200501	7,314	0.00	0.05	0.95
JMA 3_200502	JMA 3	2004-05	2005	2	200502	7,722	0.00	0.00	1.00
JMA 3_200503	JMA 3	2004-05	2005	3	200503	65,664	0.00	0.49	0.51
JMA 3_200504	JMA 3	2004-05	2005	4	200504	242,344	0.00	0.00	1.00
JMA 3_200505	JMA 3	2004-05	2005	5	200505	334,295	0.00	0.00	1.00
JMA 3_200506	JMA 3	2004-05	2005	6	200506	29,523	0.00	0.05	0.95
JMA 3_200507	JMA 3	2004-05	2005	7	200507	10,549	0.00	0.05	0.95
JMA 3_200508	JMA 3	2004-05	2005	8	200508	450	0.00	0.05	0.95
JMA 3_200509	JMA 3	2004-05	2005	9	200509	3,938	0.00	0.05	0.95
JMA 3_200510	JMA 3	2005-06	2005	10	200510	15,084	0.00	0.05	0.95
JMA 3_200511	JMA 3	2005-06	2005	11	200511	38,066	0.00	0.05	0.95
JMA 3_200512	JMA 3	2005-06	2005	12	200512	14,105	0.00	0.05	0.95
JMA 3_200601	JMA 3	2005-06	2006	1	200601	4,010	0.00	0.43	0.57
JMA 3_200602	JMA 3	2005-06	2006	2	200602	104,504	0.00	0.34	0.66
JMA 3_200603	JMA 3	2005-06	2006	3	200603	826,348	0.14	0.53	0.33
JMA 3_200604	JMA 3	2005-06	2006	4	200604	1,908,486	0.12	0.50	0.38
JMA 3_200605	JMA 3	2005-06	2006	5	200605	874,829	0.12	0.50	0.38
JMA 3_200606	JMA 3	2005-06	2006	6	200606	465,185	0.12	0.50	0.38
JMA 3_200607	JMA 3	2005-06	2006	7	200607	569,927	0.12	0.50	0.38
JMA 3_200608	JMA 3	2005-06	2006	8	200608	636	0.00	0.09	0.91
JMA 3_200609	JMA 3	2005-06	2006	9	200609	178,820	0.12	0.50	0.38
JMA 3_200610	JMA 3	2006-07	2006	10	200610	32,702	0.00	0.14	0.86
JMA 3_200611	JMA 3	2006-07	2006	11	200611	25,439	0.12	0.50	0.38
JMA 3_200612	JMA 3	2006-07	2006	12	200612	3,974	0.12	0.50	0.38
JMA 3_200701	JMA 3	2006-07	2007	1	200701	4,505	0.00	0.12	0.88
JMA 3_200702	JMA 3	2006-07	2007	2	200702	4,849	0.00	0.00	1.00
JMA 3_200703	JMA 3	2006-07	2007	3	200703	200,525	0.00	0.04	0.96
JMA 3_200704	JMA 3	2006-07	2007	4	200704	532,483	0.00	0.21	0.79
JMA 3_200705	JMA 3	2006-07	2007	5	200705	526,414	0.00	0.00	1.00
JMA 3_200706	JMA 3	2006-07	2007	6	200706	180,055	0.00	0.12	0.88
JMA 3_200707	JMA 3	2006-07	2007	7	200707	55,497	0.00	0.12	0.88
JMA 3_200708	JMA 3	2006-07	2007	8	200708	55,779	0.00	0.12	0.88
JMA 3_200709	JMA 3	2006-07	2007	9	200709	234,775	0.00	0.12	0.88
JMA 3_200710	JMA 3	2007-08	2007	10	200710	167,545	0.00	0.12	0.88
JMA 3_200711	JMA 3	2007-08	2007	11	200711	26,917	0.00	0.12	0.88
JMA 3_200712	JMA 3	2007-08	2007	12	200712	43,117	0.00	0.73	0.27
JMA 3_200801	JMA 3	2007-08	2008	1	200801	341,146	0.00	0.13	0.87
JMA 3_200802	JMA 3	2007-08	2008	2	200802	4,058	0.00	0.13	0.87
JMA 3_200803	JMA 3	2007-08	2008	3	200803	66,879	0.00	0.26	0.74
JMA 3_200804	JMA 3	2007-08	2008	4	200804	329,836	0.00	0.54	0.46
JMA 3_200805	JMA 3	2007-08	2008	5	200805	514,705	0.00	0.13	0.87
JMA 3_200806	JMA 3	2007-08	2008	6	200806	190,830	0.00	0.05	0.95
JMA 3_200807	JMA 3	2007-08	2008	7	200807	41,697	0.00	0.00	1.00
JMA 3_200808	JMA 3	2007-08	2008	8	200808	52,885	0.00	0.00	1.00
JMA 3_200809	JMA 3	2007-08	2008	9	200809	849,384	0.00	0.00	1.00
JMA 3_200810	JMA 3	2008-09	2008	10	200810	34,055	0.00	0.13	0.87
JMA 3_200811	JMA 3	2008-09	2008	11	200811	43,888	0.00	0.13	0.87
JMA 3_200812	JMA 3	2008-09	2008	12	200812	414	0.00	0.13	0.87
JMA 3_200901	JMA 3	2008-09	2009	1	200901	22,909	0.00	0.20	0.80
JMA 3_200902	JMA 3	2008-09	2009	2	200902	42,301	0.00	0.02	0.98
JMA 3_200903	JMA 3	2008-09	2009	3	200903	645,113	0.00	0.00	1.00
JMA 3_200904	JMA 3	2008-09	2009	4	200904	198,552	0.00	0.92	0.08
JMA 3_200905	JMA 3	2008-09	2009	5	200905	542,898	0.00	0.20	0.80
JMA 3_200906	JMA 3	2008-09	2009	6	200906	101,915	0.00	0.20	0.80

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 3_200907	JMA 3	2008-09	2009	7	200907	24,127	0.00	0.20	0.80
JMA 3_200908	JMA 3	2008-09	2009	8	200908	19,694	0.00	0.00	1.00
JMA 3_200909	JMA 3	2008-09	2009	9	200909	288,134	0.00	0.20	0.80
JMA 3_200910	JMA 3	2009-10	2009	10	200910	18,602	0.00	0.07	0.93
JMA 3_200911	JMA 3	2009-10	2009	11	200911	45,147	0.00	0.20	0.80
JMA 3_200912	JMA 3	2009-10	2009	12	200912	8,677	0.00	0.20	0.80
JMA 3_201001	JMA 3	2009-10	2010	1	201001	44,582	0.00	0.00	1.00
JMA 3_201002	JMA 3	2009-10	2010	2	201002	227,903	0.00	0.18	0.82
JMA 3_201003	JMA 3	2009-10	2010	3	201003	1,223,540	0.01	0.58	0.41
JMA 3_201004	JMA 3	2009-10	2010	4	201004	777,819	0.01	0.50	0.49
JMA 3_201005	JMA 3	2009-10	2010	5	201005	268,558	0.01	0.50	0.49
JMA 3_201006	JMA 3	2009-10	2010	6	201006	26,052	0.01	0.50	0.49
JMA 3_201007	JMA 3	2009-10	2010	7	201007	6,283	0.01	0.50	0.49
JMA 3_201008	JMA 3	2009-10	2010	8	201008	39	0.01	0.50	0.49
JMA 3_201009	JMA 3	2009-10	2010	9	201009	58,956	0.01	0.50	0.49
JMA 3_201010	JMA 3	2010-11	2010	10	201010	51,362	0.01	0.50	0.49
JMA 3_201011	JMA 3	2010-11	2010	11	201011	4,234	0.01	0.50	0.49
JMA 3_201012	JMA 3	2010-11	2010	12	201012	6,284	0.01	0.50	0.49
JMA 7_198510	JMA 7	1985-86	1985	10	198510	1,197,569	0.32	0.68	0.00
JMA 7_198511	JMA 7	1985-86	1985	11	198511	1,723,553	0.32	0.68	0.00
JMA 7_198512	JMA 7	1985-86	1985	12	198512	3,359,347	0.32	0.68	0.00
JMA 7_198601	JMA 7	1985-86	1986	1	198601	1,948,507	0.41	0.59	0.00
JMA 7_198602	JMA 7	1985-86	1986	2	198602	104,855	0.41	0.59	0.00
JMA 7_198603	JMA 7	1985-86	1986	3	198603	130,215	0.41	0.59	0.00
JMA 7_198604	JMA 7	1985-86	1986	4	198604	50,361	0.41	0.59	0.00
JMA 7_198605	JMA 7	1985-86	1986	5	198605	669,841	0.41	0.59	0.00
JMA 7_198606	JMA 7	1985-86	1986	6	198606	642,380	0.41	0.59	0.00
JMA 7_198607	JMA 7	1985-86	1986	7	198607	95,889	0.41	0.59	0.00
JMA 7_198608	JMA 7	1985-86	1986	8	198608	149,776	0.41	0.59	0.00
JMA 7_198609	JMA 7	1985-86	1986	9	198609	1,001,920	0.41	0.59	0.00
JMA 7_198610	JMA 7	1986-87	1986	10	198610	223,601	0.41	0.59	0.00
JMA 7_198611	JMA 7	1986-87	1986	11	198611	1,715,588	0.35	0.65	0.00
JMA 7_198612	JMA 7	1986-87	1986	12	198612	5,865,805	0.43	0.57	0.00
JMA 7_198701	JMA 7	1986-87	1987	1	198701	6,058,444	0.46	0.54	0.00
JMA 7_198702	JMA 7	1986-87	1987	2	198702	110,141	0.55	0.45	0.00
JMA 7_198703	JMA 7	1986-87	1987	3	198703	467,549	0.55	0.45	0.00
JMA 7_198704	JMA 7	1986-87	1987	4	198704	1,407,952	0.92	0.08	0.00
JMA 7_198705	JMA 7	1986-87	1987	5	198705	2,331,916	0.69	0.31	0.00
JMA 7_198706	JMA 7	1986-87	1987	6	198706	396,951	0.55	0.45	0.00
JMA 7_198707	JMA 7	1986-87	1987	7	198707	225,531	0.55	0.45	0.00
JMA 7_198708	JMA 7	1986-87	1987	8	198708	54,601	0.55	0.45	0.00
JMA 7_198709	JMA 7	1986-87	1987	9	198709	956,919	0.55	0.45	0.00
JMA 7_198710	JMA 7	1987-88	1987	10	198710	624,787	0.55	0.45	0.00
JMA 7_198711	JMA 7	1987-88	1987	11	198711	509,663	0.01	0.99	0.00
JMA 7_198712	JMA 7	1987-88	1987	12	198712	1,685,719	0.55	0.45	0.00
JMA 7_198801	JMA 7	1987-88	1988	1	198801	2,931,619	0.48	0.52	0.00
JMA 7_198802	JMA 7	1987-88	1988	2	198802	1,775,420	0.08	0.92	0.00
JMA 7_198803	JMA 7	1987-88	1988	3	198803	794,656	0.68	0.32	0.00
JMA 7_198804	JMA 7	1987-88	1988	4	198804	2,821,036	0.41	0.59	0.00
JMA 7_198805	JMA 7	1987-88	1988	5	198805	2,031,159	0.41	0.59	0.00
JMA 7_198806	JMA 7	1987-88	1988	6	198806	2,883,007	0.41	0.59	0.00
JMA 7_198807	JMA 7	1987-88	1988	7	198807	411,936	0.41	0.59	0.00
JMA 7_198808	JMA 7	1987-88	1988	8	198808	105,381	0.41	0.59	0.00
JMA 7_198809	JMA 7	1987-88	1988	9	198809	1,252,618	0.41	0.59	0.00
JMA 7_198810	JMA 7	1988-89	1988	10	198810	378,391	0.41	0.59	0.00
JMA 7_198811	JMA 7	1988-89	1988	11	198811	1,040,749	0.41	0.59	0.00
JMA 7_198812	JMA 7	1988-89	1988	12	198812	2,552,368	0.47	0.53	0.00
JMA 7_198901	JMA 7	1988-89	1989	1	198901	2,972,536	0.40	0.50	0.10
JMA 7_198902	JMA 7	1988-89	1989	2	198902	651,000	0.40	0.50	0.10
JMA 7_198903	JMA 7	1988-89	1989	3	198903	1,139,347	0.40	0.50	0.10

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 7_198904	JMA 7	1988-89	1989	4	198904	842,606	0.40	0.50	0.10
JMA 7_198905	JMA 7	1988-89	1989	5	198905	2,060,712	0.40	0.50	0.10
JMA 7_198906	JMA 7	1988-89	1989	6	198906	2,207,178	0.40	0.50	0.10
JMA 7_198907	JMA 7	1988-89	1989	7	198907	148,427	0.40	0.50	0.10
JMA 7_198908	JMA 7	1988-89	1989	8	198908	683,177	0.00	0.97	0.03
JMA 7_198909	JMA 7	1988-89	1989	9	198909	2,725,510	0.08	0.74	0.18
JMA 7_198910	JMA 7	1989-90	1989	10	198910	1,339,960	0.32	0.48	0.20
JMA 7_198911	JMA 7	1989-90	1989	11	198911	490,178	0.53	0.47	0.00
JMA 7_198912	JMA 7	1989-90	1989	12	198912	2,475,181	0.87	0.13	0.00
JMA 7_199001	JMA 7	1989-90	1990	1	199001	1,642,587	0.76	0.24	0.00
JMA 7_199002	JMA 7	1989-90	1990	2	199002	2,575,635	0.76	0.24	0.00
JMA 7_199003	JMA 7	1989-90	1990	3	199003	1,977,108	0.97	0.03	0.00
JMA 7_199004	JMA 7	1989-90	1990	4	199004	2,765,539	0.90	0.10	0.00
JMA 7_199005	JMA 7	1989-90	1990	5	199005	1,845,821	0.76	0.24	0.00
JMA 7_199006	JMA 7	1989-90	1990	6	199006	1,814,585	0.32	0.68	0.00
JMA 7_199007	JMA 7	1989-90	1990	7	199007	2,183,607	0.76	0.24	0.00
JMA 7_199008	JMA 7	1989-90	1990	8	199008	521,416	0.76	0.24	0.00
JMA 7_199009	JMA 7	1989-90	1990	9	199009	2,144,384	0.76	0.24	0.00
JMA 7_199010	JMA 7	1990-91	1990	10	199010	74,158	0.76	0.24	0.00
JMA 7_199011	JMA 7	1990-91	1990	11	199011	276,075	0.76	0.24	0.00
JMA 7_199012	JMA 7	1990-91	1990	12	199012	74,579	0.33	0.67	0.00
JMA 7_199101	JMA 7	1990-91	1991	1	199101	2,578,664	0.41	0.45	0.14
JMA 7_199102	JMA 7	1990-91	1991	2	199102	2,025,788	0.43	0.56	0.01
JMA 7_199103	JMA 7	1990-91	1991	3	199103	2,075,215	0.53	0.47	0.00
JMA 7_199104	JMA 7	1990-91	1991	4	199104	1,239,029	0.70	0.30	0.00
JMA 7_199105	JMA 7	1990-91	1991	5	199105	1,895,673	0.72	0.28	0.00
JMA 7_199106	JMA 7	1990-91	1991	6	199106	2,913,052	0.41	0.45	0.14
JMA 7_199107	JMA 7	1990-91	1991	7	199107	2,067,809	0.00	0.66	0.34
JMA 7_199108	JMA 7	1990-91	1991	8	199108	738,165	0.00	0.17	0.83
JMA 7_199109	JMA 7	1990-91	1991	9	199109	1,827,793	0.13	0.48	0.39
JMA 7_199110	JMA 7	1991-92	1991	10	199110	157,570	0.50	0.48	0.02
JMA 7_199111	JMA 7	1991-92	1991	11	199111	1,634,690	0.44	0.51	0.05
JMA 7_199112	JMA 7	1991-92	1991	12	199112	2,344,018	0.55	0.41	0.04
JMA 7_199201	JMA 7	1991-92	1992	1	199201	4,209,615	0.16	0.48	0.36
JMA 7_199202	JMA 7	1991-92	1992	2	199202	1,276,913	0.16	0.48	0.36
JMA 7_199203	JMA 7	1991-92	1992	3	199203	1,437,579	0.65	0.33	0.02
JMA 7_199204	JMA 7	1991-92	1992	4	199204	662,037	0.16	0.48	0.36
JMA 7_199205	JMA 7	1991-92	1992	5	199205	4,680,092	0.07	0.86	0.07
JMA 7_199206	JMA 7	1991-92	1992	6	199206	3,258,994	0.16	0.48	0.36
JMA 7_199207	JMA 7	1991-92	1992	7	199207	4,300,363	0.15	0.15	0.70
JMA 7_199208	JMA 7	1991-92	1992	8	199208	1,209,945	0.00	0.00	1.00
JMA 7_199209	JMA 7	1991-92	1992	9	199209	708,185	0.00	0.48	0.52
JMA 7_199210	JMA 7	1992-93	1992	10	199210	482,673	0.00	0.84	0.16
JMA 7_199211	JMA 7	1992-93	1992	11	199211	2,215,522	0.16	0.48	0.36
JMA 7_199212	JMA 7	1992-93	1992	12	199212	1,410,371	0.22	0.67	0.11
JMA 7_199301	JMA 7	1992-93	1993	1	199301	3,096,857	0.25	0.61	0.14
JMA 7_199302	JMA 7	1992-93	1993	2	199302	3,517,245	0.30	0.49	0.21
JMA 7_199303	JMA 7	1992-93	1993	3	199303	3,511,819	0.28	0.67	0.05
JMA 7_199304	JMA 7	1992-93	1993	4	199304	1,844,503	0.24	0.44	0.32
JMA 7_199305	JMA 7	1992-93	1993	5	199305	1,959,569	0.24	0.44	0.32
JMA 7_199306	JMA 7	1992-93	1993	6	199306	3,146,193	0.00	0.00	1.00
JMA 7_199307	JMA 7	1992-93	1993	7	199307	1,878,750	0.24	0.44	0.32
JMA 7_199308	JMA 7	1992-93	1993	8	199308	626,281	0.00	0.00	1.00
JMA 7_199309	JMA 7	1992-93	1993	9	199309	1,077,217	0.24	0.44	0.32
JMA 7_199310	JMA 7	1993-94	1993	10	199310	952,657	0.66	0.18	0.16
JMA 7_199311	JMA 7	1993-94	1993	11	199311	192,079	0.36	0.64	0.00
JMA 7_199312	JMA 7	1993-94	1993	12	199312	1,707,945	0.27	0.68	0.05
JMA 7_199401	JMA 7	1993-94	1994	1	199401	1,486,828	0.39	0.54	0.07
JMA 7_199402	JMA 7	1993-94	1994	2	199402	4,147,153	0.42	0.32	0.26
JMA 7_199403	JMA 7	1993-94	1994	3	199403	655,212	0.18	0.28	0.54

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 7_199404	JMA 7	1993-94	1994	4	199404	762,056	0.18	0.28	0.54
JMA 7_199405	JMA 7	1993-94	1994	5	199405	711,371	0.43	0.33	0.24
JMA 7_199406	JMA 7	1993-94	1994	6	199406	2,535,285	0.23	0.37	0.40
JMA 7_199407	JMA 7	1993-94	1994	7	199407	4,179,555	0.00	0.08	0.92
JMA 7_199408	JMA 7	1993-94	1994	8	199408	2,980,589	0.00	0.00	1.00
JMA 7_199409	JMA 7	1993-94	1994	9	199409	2,066,269	0.00	0.65	0.35
JMA 7_199410	JMA 7	1994-95	1994	10	199410	81,893	0.18	0.28	0.54
JMA 7_199411	JMA 7	1994-95	1994	11	199411	313,537	0.18	0.28	0.54
JMA 7_199412	JMA 7	1994-95	1994	12	199412	797,159	0.33	0.32	0.35
JMA 7_199501	JMA 7	1994-95	1995	1	199501	1,734,480	0.47	0.31	0.22
JMA 7_199502	JMA 7	1994-95	1995	2	199502	1,324,323	0.11	0.13	0.76
JMA 7_199503	JMA 7	1994-95	1995	3	199503	911,791	0.21	0.29	0.50
JMA 7_199504	JMA 7	1994-95	1995	4	199504	626,700	0.11	0.13	0.76
JMA 7_199505	JMA 7	1994-95	1995	5	199505	1,258,267	0.11	0.13	0.76
JMA 7_199506	JMA 7	1994-95	1995	6	199506	1,982,877	0.11	0.13	0.76
JMA 7_199507	JMA 7	1994-95	1995	7	199507	6,861,996	0.00	0.06	0.94
JMA 7_199508	JMA 7	1994-95	1995	8	199508	1,498,194	0.11	0.13	0.76
JMA 7_199509	JMA 7	1994-95	1995	9	199509	1,521,784	0.11	0.13	0.76
JMA 7_199510	JMA 7	1995-96	1995	10	199510	128,603	0.11	0.13	0.76
JMA 7_199511	JMA 7	1995-96	1995	11	199511	156,042	0.11	0.13	0.76
JMA 7_199512	JMA 7	1995-96	1995	12	199512	260,527	0.11	0.13	0.76
JMA 7_199601	JMA 7	1995-96	1996	1	199601	1,168,607	0.19	0.34	0.47
JMA 7_199602	JMA 7	1995-96	1996	2	199602	1,440,797	0.39	0.39	0.22
JMA 7_199603	JMA 7	1995-96	1996	3	199603	898,707	0.23	0.56	0.21
JMA 7_199604	JMA 7	1995-96	1996	4	199604	385,398	0.19	0.34	0.47
JMA 7_199605	JMA 7	1995-96	1996	5	199605	645,816	0.19	0.34	0.47
JMA 7_199606	JMA 7	1995-96	1996	6	199606	156,017	0.00	0.00	1.00
JMA 7_199607	JMA 7	1995-96	1996	7	199607	4,165,667	0.19	0.34	0.47
JMA 7_199608	JMA 7	1995-96	1996	8	199608	2,130,000	0.00	0.05	0.95
JMA 7_199609	JMA 7	1995-96	1996	9	199609	733,820	0.19	0.34	0.47
JMA 7_199610	JMA 7	1996-97	1996	10	199610	442,538	0.19	0.34	0.47
JMA 7_199611	JMA 7	1996-97	1996	11	199611	397,441	0.19	0.34	0.47
JMA 7_199612	JMA 7	1996-97	1996	12	199612	1,334,993	0.27	0.66	0.07
JMA 7_199701	JMA 7	1996-97	1997	1	199701	67,753	0.34	0.59	0.07
JMA 7_199702	JMA 7	1996-97	1997	2	199702	1,717,963	0.28	0.67	0.05
JMA 7_199703	JMA 7	1996-97	1997	3	199703	661,203	0.24	0.53	0.23
JMA 7_199704	JMA 7	1996-97	1997	4	199704	80,201	0.15	0.31	0.54
JMA 7_199705	JMA 7	1996-97	1997	5	199705	433,040	0.15	0.31	0.54
JMA 7_199706	JMA 7	1996-97	1997	6	199706	1,200,017	0.00	0.53	0.47
JMA 7_199707	JMA 7	1996-97	1997	7	199707	2,341,499	0.00	0.09	0.91
JMA 7_199708	JMA 7	1996-97	1997	8	199708	1,105,277	0.00	0.10	0.90
JMA 7_199709	JMA 7	1996-97	1997	9	199709	2,274,075	0.00	0.08	0.92
JMA 7_199710	JMA 7	1997-98	1997	10	199710	70,325	0.15	0.31	0.54
JMA 7_199711	JMA 7	1997-98	1997	11	199711	417,205	0.37	0.44	0.19
JMA 7_199712	JMA 7	1997-98	1997	12	199712	1,766,791	0.50	0.38	0.12
JMA 7_199801	JMA 7	1997-98	1998	1	199801	930,974	0.30	0.61	0.09
JMA 7_199802	JMA 7	1997-98	1998	2	199802	2,758,183	0.44	0.52	0.04
JMA 7_199803	JMA 7	1997-98	1998	3	199803	44,558	0.34	0.45	0.21
JMA 7_199804	JMA 7	1997-98	1998	4	199804	2,059,458	0.34	0.45	0.21
JMA 7_199805	JMA 7	1997-98	1998	5	199805	1,061,313	0.34	0.45	0.21
JMA 7_199806	JMA 7	1997-98	1998	6	199806	1,306,652	0.34	0.45	0.21
JMA 7_199807	JMA 7	1997-98	1998	7	199807	1,013,862	0.00	0.16	0.84
JMA 7_199808	JMA 7	1997-98	1998	8	199808	1,907,741	0.34	0.45	0.21
JMA 7_199809	JMA 7	1997-98	1998	9	199809	954,939	0.34	0.45	0.21
JMA 7_199810	JMA 7	1998-99	1998	10	199810	205,412	0.34	0.45	0.21
JMA 7_199811	JMA 7	1998-99	1998	11	199811	81,397	0.34	0.45	0.21
JMA 7_199812	JMA 7	1998-99	1998	12	199812	1,104,788	0.41	0.44	0.15
JMA 7_199901	JMA 7	1998-99	1999	1	199901	1,438,646	0.41	0.46	0.13
JMA 7_199902	JMA 7	1998-99	1999	2	199902	59,126	0.11	0.70	0.19
JMA 7_199903	JMA 7	1998-99	1999	3	199903	73,178	0.11	0.70	0.19

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 7_199904	JMA 7	1998-99	1999	4	199904	1,625,016	0.13	0.87	0.00
JMA 7_199905	JMA 7	1998-99	1999	5	199905	1,079,376	0.11	0.70	0.19
JMA 7_199906	JMA 7	1998-99	1999	6	199906	3,108,849	0.00	0.98	0.02
JMA 7_199907	JMA 7	1998-99	1999	7	199907	2,354,727	0.00	0.79	0.21
JMA 7_199908	JMA 7	1998-99	1999	8	199908	1,047,954	0.00	0.00	1.00
JMA 7_199909	JMA 7	1998-99	1999	9	199909	1,395,531	0.33	0.41	0.26
JMA 7_199910	JMA 7	1999-00	1999	10	199910	2,331,409	0.08	0.78	0.14
JMA 7_199911	JMA 7	1999-00	1999	11	199911	40,901	0.31	0.56	0.13
JMA 7_199912	JMA 7	1999-00	1999	12	199912	245,655	0.11	0.70	0.19
JMA 7_200001	JMA 7	1999-00	2000	1	200001	2,051,094	0.13	0.48	0.39
JMA 7_200002	JMA 7	1999-00	2000	2	200002	42,263	0.13	0.48	0.39
JMA 7_200003	JMA 7	1999-00	2000	3	200003	48,517	0.13	0.48	0.39
JMA 7_200004	JMA 7	1999-00	2000	4	200004	175,059	0.13	0.48	0.39
JMA 7_200005	JMA 7	1999-00	2000	5	200005	196,004	0.13	0.48	0.39
JMA 7_200006	JMA 7	1999-00	2000	6	200006	52,708	0.00	1.00	0.00
JMA 7_200007	JMA 7	1999-00	2000	7	200007	2,355,790	0.00	0.27	0.73
JMA 7_200008	JMA 7	1999-00	2000	8	200008	149,617	0.00	0.52	0.48
JMA 7_200009	JMA 7	1999-00	2000	9	200009	199,984	0.13	0.48	0.39
JMA 7_200010	JMA 7	2000-01	2000	10	200010	677,006	0.08	0.84	0.08
JMA 7_200011	JMA 7	2000-01	2000	11	200011	142,842	0.08	0.71	0.21
JMA 7_200012	JMA 7	2000-01	2000	12	200012	3,538,660	0.23	0.53	0.24
JMA 7_200101	JMA 7	2000-01	2001	1	200101	4,094,616	0.12	0.86	0.02
JMA 7_200102	JMA 7	2000-01	2001	2	200102	34,297	0.12	0.86	0.02
JMA 7_200103	JMA 7	2000-01	2001	3	200103	101,521	0.12	0.86	0.02
JMA 7_200104	JMA 7	2000-01	2001	4	200104	21,198	0.32	0.65	0.03
JMA 7_200105	JMA 7	2000-01	2001	5	200105	474,617	0.12	0.86	0.02
JMA 7_200106	JMA 7	2000-01	2001	6	200106	2,790,145	0.12	0.86	0.02
JMA 7_200107	JMA 7	2000-01	2001	7	200107	3,226,076	0.00	1.00	0.00
JMA 7_200108	JMA 7	2000-01	2001	8	200108	340,813	0.01	0.99	0.00
JMA 7_200109	JMA 7	2000-01	2001	9	200109	261,209	0.00	0.67	0.33
JMA 7_200110	JMA 7	2001-02	2001	10	200110	1,777,546	0.38	0.59	0.03
JMA 7_200111	JMA 7	2001-02	2001	11	200111	652,660	0.12	0.86	0.02
JMA 7_200112	JMA 7	2001-02	2001	12	200112	4,783,817	0.12	0.86	0.02
JMA 7_200201	JMA 7	2001-02	2002	1	200201	6,808,138	0.07	0.84	0.09
JMA 7_200202	JMA 7	2001-02	2002	2	200202	23,604	0.07	0.84	0.09
JMA 7_200203	JMA 7	2001-02	2002	3	200203	32,356	0.07	0.84	0.09
JMA 7_200204	JMA 7	2001-02	2002	4	200204	493,981	0.07	0.84	0.09
JMA 7_200205	JMA 7	2001-02	2002	5	200205	566,814	0.07	0.84	0.09
JMA 7_200206	JMA 7	2001-02	2002	6	200206	1,963,650	0.07	0.84	0.09
JMA 7_200207	JMA 7	2001-02	2002	7	200207	3,888,934	0.00	1.00	0.00
JMA 7_200208	JMA 7	2001-02	2002	8	200208	176,363	0.13	0.69	0.18
JMA 7_200209	JMA 7	2001-02	2002	9	200209	1,170,137	0.09	0.81	0.10
JMA 7_200210	JMA 7	2002-03	2002	10	200210	1,689,144	0.17	0.77	0.06
JMA 7_200211	JMA 7	2002-03	2002	11	200211	1,833,169	0.12	0.57	0.31
JMA 7_200212	JMA 7	2002-03	2002	12	200212	3,085,028	0.07	0.84	0.09
JMA 7_200301	JMA 7	2002-03	2003	1	200301	5,565,977	0.55	0.44	0.01
JMA 7_200302	JMA 7	2002-03	2003	2	200302	1,122,335	0.55	0.44	0.01
JMA 7_200303	JMA 7	2002-03	2003	3	200303	51,050	0.55	0.44	0.01
JMA 7_200304	JMA 7	2002-03	2003	4	200304	566,054	0.62	0.38	0.00
JMA 7_200305	JMA 7	2002-03	2003	5	200305	4,289,409	0.76	0.24	0.00
JMA 7_200306	JMA 7	2002-03	2003	6	200306	98,776	0.55	0.44	0.01
JMA 7_200307	JMA 7	2002-03	2003	7	200307	6,916,788	0.55	0.44	0.01
JMA 7_200308	JMA 7	2002-03	2003	8	200308	632,438	1.00	0.00	0.00
JMA 7_200309	JMA 7	2002-03	2003	9	200309	233,830	0.55	0.44	0.01
JMA 7_200310	JMA 7	2003-04	2003	10	200310	2,352,719	0.39	0.61	0.00
JMA 7_200311	JMA 7	2003-04	2003	11	200311	5,091,147	0.55	0.44	0.01
JMA 7_200312	JMA 7	2003-04	2003	12	200312	2,534,251	0.20	0.74	0.06
JMA 7_200401	JMA 7	2003-04	2004	1	200401	8,232,917	0.20	0.74	0.06
JMA 7_200402	JMA 7	2003-04	2004	2	200402	25,370	0.35	0.59	0.06
JMA 7_200403	JMA 7	2003-04	2004	3	200403	31,757	0.35	0.59	0.06

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA_7_200404	JMA_7	2003-04	2004	4	200404	24,613	0.35	0.59	0.06
JMA_7_200405	JMA_7	2003-04	2004	5	200405	455,143	0.35	0.59	0.06
JMA_7_200406	JMA_7	2003-04	2004	6	200406	1,766,229	0.35	0.59	0.06
JMA_7_200407	JMA_7	2003-04	2004	7	200407	5,633,849	0.35	0.59	0.06
JMA_7_200408	JMA_7	2003-04	2004	8	200408	766,105	0.09	0.83	0.08
JMA_7_200409	JMA_7	2003-04	2004	9	200409	1,968,900	0.29	0.69	0.02
JMA_7_200410	JMA_7	2004-05	2004	10	200410	6,011,836	0.35	0.59	0.06
JMA_7_200411	JMA_7	2004-05	2004	11	200411	3,908,887	0.42	0.43	0.15
JMA_7_200412	JMA_7	2004-05	2004	12	200412	5,053,533	0.62	0.36	0.02
JMA_7_200501	JMA_7	2004-05	2005	1	200501	8,172,320	0.15	0.80	0.05
JMA_7_200502	JMA_7	2004-05	2005	2	200502	945,957	0.15	0.80	0.05
JMA_7_200503	JMA_7	2004-05	2005	3	200503	20,212	0.15	0.80	0.05
JMA_7_200504	JMA_7	2004-05	2005	4	200504	274,739	0.63	0.37	0.00
JMA_7_200505	JMA_7	2004-05	2005	5	200505	738,243	0.80	0.20	0.00
JMA_7_200506	JMA_7	2004-05	2005	6	200506	1,168,073	0.61	0.39	0.00
JMA_7_200507	JMA_7	2004-05	2005	7	200507	7,067,596	0.00	0.97	0.03
JMA_7_200508	JMA_7	2004-05	2005	8	200508	2,954,078	0.00	0.97	0.03
JMA_7_200509	JMA_7	2004-05	2005	9	200509	191,526	0.23	0.60	0.17
JMA_7_200510	JMA_7	2005-06	2005	10	200510	3,842,406	0.15	0.80	0.05
JMA_7_200511	JMA_7	2005-06	2005	11	200511	2,794,968	0.15	0.80	0.05
JMA_7_200512	JMA_7	2005-06	2005	12	200512	6,133,859	0.22	0.70	0.08
JMA_7_200601	JMA_7	2005-06	2006	1	200601	4,551,350	0.25	0.72	0.03
JMA_7_200602	JMA_7	2005-06	2006	2	200602	107,190	0.25	0.72	0.03
JMA_7_200603	JMA_7	2005-06	2006	3	200603	13,740	0.25	0.72	0.03
JMA_7_200604	JMA_7	2005-06	2006	4	200604	1,212,080	0.25	0.72	0.03
JMA_7_200605	JMA_7	2005-06	2006	5	200605	1,513,483	0.25	0.72	0.03
JMA_7_200606	JMA_7	2005-06	2006	6	200606	1,904,457	0.33	0.66	0.01
JMA_7_200607	JMA_7	2005-06	2006	7	200607	4,616,851	0.18	0.80	0.02
JMA_7_200608	JMA_7	2005-06	2006	8	200608	722,067	0.39	0.61	0.00
JMA_7_200609	JMA_7	2005-06	2006	9	200609	369,550	0.25	0.72	0.03
JMA_7_200610	JMA_7	2006-07	2006	10	200610	2,243,828	0.31	0.65	0.04
JMA_7_200611	JMA_7	2006-07	2006	11	200611	2,423,300	0.37	0.59	0.04
JMA_7_200612	JMA_7	2006-07	2006	12	200612	4,268,848	0.17	0.79	0.04
JMA_7_200701	JMA_7	2006-07	2007	1	200701	9,072,099	0.10	0.87	0.03
JMA_7_200702	JMA_7	2006-07	2007	2	200702	566,380	0.23	0.70	0.07
JMA_7_200703	JMA_7	2006-07	2007	3	200703	11,328	0.23	0.70	0.07
JMA_7_200704	JMA_7	2006-07	2007	4	200704	2,585,965	0.51	0.47	0.02
JMA_7_200705	JMA_7	2006-07	2007	5	200705	2,221,588	0.23	0.70	0.07
JMA_7_200706	JMA_7	2006-07	2007	6	200706	26,808	0.16	0.81	0.03
JMA_7_200707	JMA_7	2006-07	2007	7	200707	6,107,083	0.05	0.83	0.12
JMA_7_200708	JMA_7	2006-07	2007	8	200708	1,339,681	0.20	0.77	0.03
JMA_7_200709	JMA_7	2006-07	2007	9	200709	1,172,093	0.47	0.53	0.00
JMA_7_200710	JMA_7	2007-08	2007	10	200710	4,296,941	0.39	0.51	0.10
JMA_7_200711	JMA_7	2007-08	2007	11	200711	578,744	0.05	0.81	0.14
JMA_7_200712	JMA_7	2007-08	2007	12	200712	7,754,608	0.33	0.59	0.08
JMA_7_200801	JMA_7	2007-08	2008	1	200801	9,172,850	0.20	0.69	0.11
JMA_7_200802	JMA_7	2007-08	2008	2	200802	529,238	0.23	0.70	0.07
JMA_7_200803	JMA_7	2007-08	2008	3	200803	9,331	0.23	0.70	0.07
JMA_7_200804	JMA_7	2007-08	2008	4	200804	1,910,139	0.23	0.70	0.07
JMA_7_200805	JMA_7	2007-08	2008	5	200805	7,359	0.23	0.70	0.07
JMA_7_200806	JMA_7	2007-08	2008	6	200806	1,336,619	0.16	0.78	0.06
JMA_7_200807	JMA_7	2007-08	2008	7	200807	5,807,065	0.27	0.72	0.01
JMA_7_200808	JMA_7	2007-08	2008	8	200808	1,099,454	0.44	0.46	0.10
JMA_7_200809	JMA_7	2007-08	2008	9	200809	1,556,651	0.25	0.70	0.05
JMA_7_200810	JMA_7	2008-09	2008	10	200810	599,469	0.25	0.60	0.15
JMA_7_200811	JMA_7	2008-09	2008	11	200811	4,680,228	0.24	0.67	0.09
JMA_7_200812	JMA_7	2008-09	2008	12	200812	4,628,941	0.22	0.72	0.06
JMA_7_200901	JMA_7	2008-09	2009	1	200901	8,666,667	0.18	0.79	0.03
JMA_7_200902	JMA_7	2008-09	2009	2	200902	1,700,663	0.26	0.69	0.05
JMA_7_200903	JMA_7	2008-09	2009	3	200903	86,413	0.26	0.69	0.05

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMA_Catch	JMN	JMD	JMM
JMA 7_200904	JMA 7	2008-09	2009	4	200904	11,884	0.26	0.69	0.05
JMA 7_200905	JMA 7	2008-09	2009	5	200905	470,383	0.14	0.86	0.00
JMA 7_200906	JMA 7	2008-09	2009	6	200906	908,344	0.22	0.76	0.02
JMA 7_200907	JMA 7	2008-09	2009	7	200907	5,086,349	0.26	0.69	0.05
JMA 7_200908	JMA 7	2008-09	2009	8	200908	1,006,396	0.01	0.90	0.09
JMA 7_200909	JMA 7	2008-09	2009	9	200909	982,263	0.26	0.69	0.05
JMA 7_200910	JMA 7	2009-10	2009	10	200910	4,320,065	0.36	0.54	0.10
JMA 7_200911	JMA 7	2009-10	2009	11	200911	786,571	0.62	0.37	0.01
JMA 7_200912	JMA 7	2009-10	2009	12	200912	6,714,138	0.31	0.63	0.06
JMA 7_201001	JMA 7	2009-10	2010	1	201001	7,259,623	0.16	0.77	0.07
JMA 7_201002	JMA 7	2009-10	2010	2	201002	2,347,704	0.18	0.75	0.07
JMA 7_201003	JMA 7	2009-10	2010	3	201003	473,486	0.44	0.56	0.00
JMA 7_201004	JMA 7	2009-10	2010	4	201004	2,057,616	0.18	0.75	0.07
JMA 7_201005	JMA 7	2009-10	2010	5	201005	855,892	0.18	0.75	0.07
JMA 7_201006	JMA 7	2009-10	2010	6	201006	3,589,008	0.18	0.75	0.07
JMA 7_201007	JMA 7	2009-10	2010	7	201007	2,477,197	0.18	0.75	0.07
JMA 7_201008	JMA 7	2009-10	2010	8	201008	131,860	0.18	0.75	0.07
JMA 7_201009	JMA 7	2009-10	2010	9	201009	139,132	0.18	0.75	0.07
JMA 7_201010	JMA 7	2010-11	2010	10	201010	1,767,396	0.18	0.75	0.07
JMA 7_201011	JMA 7	2010-11	2010	11	201011	23,515	0.18	0.75	0.07
JMA 7_201012	JMA 7	2010-11	2010	12	201012	7,197,663	0.18	0.75	0.07

Appendix B

Final estimated, raised monthly catches (kg) of *Trachurus novaezelandiae* (JMN), *T. declivis* (JMD) and *T. murphyi* (JMM) in New Zealand pelagic fisheries by fisheries management area (JMA 1, JMA 3 and JMA 7) and month from October 1985 to December 2010.

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 1_198510	JMA 1	1985-86	1985	10	198510	341,909	65,125	0	407,034
JMA 1_198511	JMA 1	1985-86	1985	11	198511	64,726	12,329	0	77,055
JMA 1_198512	JMA 1	1985-86	1985	12	198512	103,833	19,778	0	123,611
JMA 1_198601	JMA 1	1985-86	1986	1	198601	76,752	14,620	0	91,372
JMA 1_198602	JMA 1	1985-86	1986	2	198602	1,240	236	0	1,476
JMA 1_198603	JMA 1	1985-86	1986	3	198603	2,326	443	0	2,769
JMA 1_198604	JMA 1	1985-86	1986	4	198604	750	143	0	893
JMA 1_198605	JMA 1	1985-86	1986	5	198605	2,171	413	0	2,584
JMA 1_198606	JMA 1	1985-86	1986	6	198606	112,683	21,464	0	134,147
JMA 1_198607	JMA 1	1985-86	1986	7	198607	10,958	2,087	0	13,045
JMA 1_198608	JMA 1	1985-86	1986	8	198608	266,276	50,719	0	316,995
JMA 1_198609	JMA 1	1985-86	1986	9	198609	171,670	32,699	0	204,369
JMA 1_198610	JMA 1	1986-87	1986	10	198610	150,694	28,704	0	179,398
JMA 1_198611	JMA 1	1986-87	1986	11	198611	515,625	98,214	0	613,839
JMA 1_198612	JMA 1	1986-87	1986	12	198612	948,921	180,747	0	1,129,668
JMA 1_198701	JMA 1	1986-87	1987	1	198701	212,118	40,403	0	252,521
JMA 1_198702	JMA 1	1986-87	1987	2	198702	189,155	36,030	0	225,185
JMA 1_198703	JMA 1	1986-87	1987	3	198703	159,752	30,429	0	190,181
JMA 1_198704	JMA 1	1986-87	1987	4	198704	336,790	64,151	0	400,941
JMA 1_198705	JMA 1	1986-87	1987	5	198705	257,788	49,102	0	306,890
JMA 1_198706	JMA 1	1986-87	1987	6	198706	296,703	56,515	0	353,218
JMA 1_198707	JMA 1	1986-87	1987	7	198707	21,013	4,003	0	25,016
JMA 1_198708	JMA 1	1986-87	1987	8	198708	97,401	18,552	0	115,953
JMA 1_198709	JMA 1	1986-87	1987	9	198709	221,079	42,110	0	263,189
JMA 1_198710	JMA 1	1987-88	1987	10	198710	165,330	31,491	0	196,821
JMA 1_198711	JMA 1	1987-88	1987	11	198711	264,219	50,328	0	314,547
JMA 1_198712	JMA 1	1987-88	1987	12	198712	276,251	52,619	0	328,870
JMA 1_198801	JMA 1	1987-88	1988	1	198801	10,674	2,033	0	12,707
JMA 1_198802	JMA 1	1987-88	1988	2	198802	20,231	3,853	0	24,084
JMA 1_198803	JMA 1	1987-88	1988	3	198803	5,911	1,126	0	7,037
JMA 1_198804	JMA 1	1987-88	1988	4	198804	5,769	1,099	0	6,868
JMA 1_198805	JMA 1	1987-88	1988	5	198805	116,238	22,141	0	138,379
JMA 1_198806	JMA 1	1987-88	1988	6	198806	554,978	105,710	0	660,688
JMA 1_198807	JMA 1	1987-88	1988	7	198807	425,602	81,067	0	506,669
JMA 1_198808	JMA 1	1987-88	1988	8	198808	226,174	43,081	0	269,255
JMA 1_198809	JMA 1	1987-88	1988	9	198809	539,343	102,732	0	642,075
JMA 1_198810	JMA 1	1988-89	1988	10	198810	281,053	53,534	0	334,587
JMA 1_198811	JMA 1	1988-89	1988	11	198811	371,077	70,681	0	441,758
JMA 1_198812	JMA 1	1988-89	1988	12	198812	142,816	27,203	0	170,019
JMA 1_198901	JMA 1	1988-89	1989	1	198901	5,294	975	697	6,966
JMA 1_198902	JMA 1	1988-89	1989	2	198902	7,263	1,338	956	9,557
JMA 1_198903	JMA 1	1988-89	1989	3	198903	8,759	1,613	1,152	11,524
JMA 1_198904	JMA 1	1988-89	1989	4	198904	7,355	1,355	968	9,678
JMA 1_198905	JMA 1	1988-89	1989	5	198905	285,289	52,553	37,538	375,380
JMA 1_198906	JMA 1	1988-89	1989	6	198906	139,646	25,724	18,375	183,745
JMA 1_198907	JMA 1	1988-89	1989	7	198907	494,883	91,163	65,116	651,162
JMA 1_198908	JMA 1	1988-89	1989	8	198908	135,931	25,040	17,886	178,857
JMA 1_198909	JMA 1	1988-89	1989	9	198909	465,804	85,806	61,290	612,900
JMA 1_198910	JMA 1	1989-90	1989	10	198910	712,621	131,272	93,766	937,659
JMA 1_198911	JMA 1	1989-90	1989	11	198911	541,873	99,819	71,299	712,991
JMA 1_198912	JMA 1	1989-90	1989	12	198912	39,555	7,286	5,205	52,046
JMA 1_199001	JMA 1	1989-90	1990	1	199001	86,120	16,404	0	102,524

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 1_199002	JMA 1	1989-90	1990	2	199002	15,566	2,965	0	18,531
JMA 1_199003	JMA 1	1989-90	1990	3	199003	56,404	10,744	0	67,148
JMA 1_199004	JMA 1	1989-90	1990	4	199004	14,776	2,815	0	17,591
JMA 1_199005	JMA 1	1989-90	1990	5	199005	161,614	30,784	0	192,398
JMA 1_199006	JMA 1	1989-90	1990	6	199006	59,997	11,428	0	71,425
JMA 1_199007	JMA 1	1989-90	1990	7	199007	237,536	45,245	0	282,781
JMA 1_199008	JMA 1	1989-90	1990	8	199008	979,595	186,590	0	1,166,185
JMA 1_199009	JMA 1	1989-90	1990	9	199009	518,258	98,716	0	616,974
JMA 1_199010	JMA 1	1990-91	1990	10	199010	503,147	95,837	0	598,984
JMA 1_199011	JMA 1	1990-91	1990	11	199011	587,079	111,825	0	698,904
JMA 1_199012	JMA 1	1990-91	1990	12	199012	627,503	119,524	0	747,027
JMA 1_199101	JMA 1	1990-91	1991	1	199101	13,346	2,595	2,595	18,536
JMA 1_199102	JMA 1	1990-91	1991	2	199102	14,849	2,887	2,887	20,623
JMA 1_199103	JMA 1	1990-91	1991	3	199103	5,462	1,062	1,062	7,586
JMA 1_199104	JMA 1	1990-91	1991	4	199104	303,370	58,989	58,989	421,348
JMA 1_199105	JMA 1	1990-91	1991	5	199105	677,624	131,760	131,760	941,144
JMA 1_199106	JMA 1	1990-91	1991	6	199106	965,166	187,671	187,671	1,340,508
JMA 1_199107	JMA 1	1990-91	1991	7	199107	339,892	66,090	66,090	472,072
JMA 1_199108	JMA 1	1990-91	1991	8	199108	441,000	85,750	85,750	612,500
JMA 1_199109	JMA 1	1990-91	1991	9	199109	426,791	82,987	82,987	592,765
JMA 1_199110	JMA 1	1991-92	1991	10	199110	188,951	36,740	36,740	262,431
JMA 1_199111	JMA 1	1991-92	1991	11	199111	288,492	56,096	56,096	400,684
JMA 1_199112	JMA 1	1991-92	1991	12	199112	517,087	100,545	100,545	718,177
JMA 1_199201	JMA 1	1991-92	1992	1	199201	341,606	63,260	227,737	632,603
JMA 1_199202	JMA 1	1991-92	1992	2	199202	419,802	77,741	279,868	777,411
JMA 1_199203	JMA 1	1991-92	1992	3	199203	213,717	39,577	142,478	395,772
JMA 1_199204	JMA 1	1991-92	1992	4	199204	767,890	142,202	511,926	1,422,018
JMA 1_199205	JMA 1	1991-92	1992	5	199205	135,645	25,119	90,430	251,194
JMA 1_199206	JMA 1	1991-92	1992	6	199206	9,144	1,693	6,096	16,933
JMA 1_199207	JMA 1	1991-92	1992	7	199207	516,939	95,729	344,626	957,294
JMA 1_199208	JMA 1	1991-92	1992	8	199208	328,516	60,836	219,011	608,363
JMA 1_199209	JMA 1	1991-92	1992	9	199209	310,023	57,412	206,682	574,117
JMA 1_199210	JMA 1	1992-93	1992	10	199210	125,988	23,331	83,992	233,311
JMA 1_199211	JMA 1	1992-93	1992	11	199211	170,430	31,561	113,620	315,611
JMA 1_199212	JMA 1	1992-93	1992	12	199212	402,499	74,537	268,332	745,368
JMA 1_199301	JMA 1	1992-93	1993	1	199301	324,925	62,705	182,414	570,044
JMA 1_199302	JMA 1	1992-93	1993	2	199302	202,658	39,109	113,773	355,540
JMA 1_199303	JMA 1	1992-93	1993	3	199303	99,578	19,217	55,903	174,698
JMA 1_199304	JMA 1	1992-93	1993	4	199304	294,946	56,919	165,584	517,449
JMA 1_199305	JMA 1	1992-93	1993	5	199305	552,477	106,618	310,162	969,257
JMA 1_199306	JMA 1	1992-93	1993	6	199306	421,579	81,357	236,676	739,612
JMA 1_199307	JMA 1	1992-93	1993	7	199307	282,409	54,500	158,546	495,455
JMA 1_199308	JMA 1	1992-93	1993	8	199308	59,156	11,416	33,210	103,782
JMA 1_199309	JMA 1	1992-93	1993	9	199309	1,323,526	255,417	743,032	2,321,975
JMA 1_199310	JMA 1	1993-94	1993	10	199310	829,421	160,064	465,640	1,455,125
JMA 1_199311	JMA 1	1993-94	1993	11	199311	731,588	141,184	410,716	1,283,488
JMA 1_199312	JMA 1	1993-94	1993	12	199312	399,808	77,156	224,454	701,418
JMA 1_199401	JMA 1	1993-94	1994	1	199401	29,350	111,530	446,120	587,000
JMA 1_199402	JMA 1	1993-94	1994	2	199402	4,623	17,568	70,273	92,464
JMA 1_199403	JMA 1	1993-94	1994	3	199403	18,256	69,371	277,484	365,111
JMA 1_199404	JMA 1	1993-94	1994	4	199404	12,316	46,799	187,197	246,312
JMA 1_199405	JMA 1	1993-94	1994	5	199405	27,430	104,236	416,942	548,608
JMA 1_199406	JMA 1	1993-94	1994	6	199406	51,613	196,128	784,513	1,032,254
JMA 1_199407	JMA 1	1993-94	1994	7	199407	89,374	339,620	1,358,480	1,787,474
JMA 1_199408	JMA 1	1993-94	1994	8	199408	153,195	582,141	2,328,563	3,063,899
JMA 1_199409	JMA 1	1993-94	1994	9	199409	154,642	587,641	2,350,565	3,092,848
JMA 1_199410	JMA 1	1994-95	1994	10	199410	0	155,295	63,431	218,726
JMA 1_199411	JMA 1	1994-95	1994	11	199411	0	128,424	941,777	1,070,201
JMA 1_199412	JMA 1	1994-95	1994	12	199412	106,688	133,360	649,017	889,065
JMA 1_199501	JMA 1	1994-95	1995	1	199501	182,712	140,547	379,478	702,737

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 1_199502	JMA 1	1994-95	1995	2	199502	248,402	30,506	156,885	435,793
JMA 1_199503	JMA 1	1994-95	1995	3	199503	325,736	3,290	0	329,026
JMA 1_199504	JMA 1	1994-95	1995	4	199504	106,791	0	0	106,791
JMA 1_199505	JMA 1	1994-95	1995	5	199505	184,146	0	0	184,146
JMA 1_199506	JMA 1	1994-95	1995	6	199506	589,151	0	0	589,151
JMA 1_199507	JMA 1	1994-95	1995	7	199507	359,473	0	0	359,473
JMA 1_199508	JMA 1	1994-95	1995	8	199508	39,230	470,763	1,451,520	1,961,513
JMA 1_199509	JMA 1	1994-95	1995	9	199509	650,349	59,123	275,906	985,378
JMA 1_199510	JMA 1	1995-96	1995	10	199510	199,953	89,453	236,786	526,192
JMA 1_199511	JMA 1	1995-96	1995	11	199511	55,908	12,902	17,203	86,013
JMA 1_199512	JMA 1	1995-96	1995	12	199512	122,246	2,521	1,260	126,027
JMA 1_199601	JMA 1	1995-96	1996	1	199601	22,143	0	0	22,143
JMA 1_199602	JMA 1	1995-96	1996	2	199602	110,793	0	0	110,793
JMA 1_199603	JMA 1	1995-96	1996	3	199603	58,287	0	1,190	59,477
JMA 1_199604	JMA 1	1995-96	1996	4	199604	153,455	22,930	0	176,385
JMA 1_199605	JMA 1	1995-96	1996	5	199605	0	48,257	137,345	185,602
JMA 1_199606	JMA 1	1995-96	1996	6	199606	567,251	0	124,518	691,769
JMA 1_199607	JMA 1	1995-96	1996	7	199607	1,141,752	0	155,694	1,297,446
JMA 1_199608	JMA 1	1995-96	1996	8	199608	1,746,737	0	0	1,746,737
JMA 1_199609	JMA 1	1995-96	1996	9	199609	1,826,962	0	18,454	1,845,416
JMA 1_199610	JMA 1	1996-97	1996	10	199610	300,044	20,003	346,717	666,764
JMA 1_199611	JMA 1	1996-97	1996	11	199611	87,555	35,818	75,615	198,988
JMA 1_199612	JMA 1	1996-97	1996	12	199612	78,151	2,030	21,314	101,495
JMA 1_199701	JMA 1	1996-97	1997	1	199701	39,529	3,437	0	42,966
JMA 1_199702	JMA 1	1996-97	1997	2	199702	9,884	852	6,306	17,042
JMA 1_199703	JMA 1	1996-97	1997	3	199703	11,442	986	7,299	19,727
JMA 1_199704	JMA 1	1996-97	1997	4	199704	151,111	0	0	151,111
JMA 1_199705	JMA 1	1996-97	1997	5	199705	301,789	0	0	301,789
JMA 1_199706	JMA 1	1996-97	1997	6	199706	515,069	0	0	515,069
JMA 1_199707	JMA 1	1996-97	1997	7	199707	1,259,033	16,351	359,724	1,635,108
JMA 1_199708	JMA 1	1996-97	1997	8	199708	1,234,761	18,996	645,875	1,899,632
JMA 1_199709	JMA 1	1996-97	1997	9	199709	749,269	245,215	367,823	1,362,307
JMA 1_199710	JMA 1	1997-98	1997	10	199710	597,718	74,715	821,862	1,494,295
JMA 1_199711	JMA 1	1997-98	1997	11	199711	142,084	55,137	14,845	212,066
JMA 1_199712	JMA 1	1997-98	1997	12	199712	133,813	24,330	1,058,336	1,216,479
JMA 1_199801	JMA 1	1997-98	1998	1	199801	8,240	1,348	5,394	14,982
JMA 1_199802	JMA 1	1997-98	1998	2	199802	10,194	1,668	6,672	18,534
JMA 1_199803	JMA 1	1997-98	1998	3	199803	15,046	2,462	9,848	27,356
JMA 1_199804	JMA 1	1997-98	1998	4	199804	154,867	0	0	154,867
JMA 1_199805	JMA 1	1997-98	1998	5	199805	0	6,146	49,725	55,871
JMA 1_199806	JMA 1	1997-98	1998	6	199806	436,194	0	0	436,194
JMA 1_199807	JMA 1	1997-98	1998	7	199807	88,682	0	0	88,682
JMA 1_199808	JMA 1	1997-98	1998	8	199808	132,427	88,284	882,845	1,103,556
JMA 1_199809	JMA 1	1997-98	1998	9	199809	2,297,696	114,885	459,539	2,872,120
JMA 1_199810	JMA 1	1998-99	1998	10	199810	798,156	315,062	987,193	2,100,411
JMA 1_199811	JMA 1	1998-99	1998	11	199811	151,164	132,269	346,418	629,851
JMA 1_199812	JMA 1	1998-99	1998	12	199812	101,124	0	4,213	105,337
JMA 1_199901	JMA 1	1998-99	1999	1	199901	18,721	3,077	3,847	25,645
JMA 1_199902	JMA 1	1998-99	1999	2	199902	27,860	4,580	5,725	38,165
JMA 1_199903	JMA 1	1998-99	1999	3	199903	29,486	4,847	6,059	40,392
JMA 1_199904	JMA 1	1998-99	1999	4	199904	0	17,465	7,847	25,312
JMA 1_199905	JMA 1	1998-99	1999	5	199905	63,468	10,433	13,041	86,942
JMA 1_199906	JMA 1	1998-99	1999	6	199906	445,984	176,535	306,614	929,133
JMA 1_199907	JMA 1	1998-99	1999	7	199907	586,374	11,967	0	598,341
JMA 1_199908	JMA 1	1998-99	1999	8	199908	667,095	21,066	14,044	702,205
JMA 1_199909	JMA 1	1998-99	1999	9	199909	485,270	0	0	485,270
JMA 1_199910	JMA 1	1999-00	1999	10	199910	62,333	149,599	203,620	415,552
JMA 1_199911	JMA 1	1999-00	1999	11	199911	114,475	14,309	1,301	130,085
JMA 1_199912	JMA 1	1999-00	1999	12	199912	144,065	12,527	0	156,592
JMA 1_200001	JMA 1	1999-00	2000	1	200001	9,532	406	203	10,141

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 1_200002	JMA 1	1999-00	2000	2	200002	31,026	0	0	31,026
JMA 1_200003	JMA 1	1999-00	2000	3	200003	0	0	23,335	23,335
JMA 1_200004	JMA 1	1999-00	2000	4	200004	68,426	2,912	1,456	72,794
JMA 1_200005	JMA 1	1999-00	2000	5	200005	129,749	5,521	2,761	138,031
JMA 1_200006	JMA 1	1999-00	2000	6	200006	240,660	0	0	240,660
JMA 1_200007	JMA 1	1999-00	2000	7	200007	9,662	411	206	10,279
JMA 1_200008	JMA 1	1999-00	2000	8	200008	347,415	0	0	347,415
JMA 1_200009	JMA 1	1999-00	2000	9	200009	1,290,090	0	0	1,290,090
JMA 1_200010	JMA 1	2000-01	2000	10	200010	304,722	0	0	304,722
JMA 1_200011	JMA 1	2000-01	2000	11	200011	300,842	56,916	48,785	406,543
JMA 1_200012	JMA 1	2000-01	2000	12	200012	279,014	65,448	0	344,462
JMA 1_200101	JMA 1	2000-01	2001	1	200101	416,687	0	0	416,687
JMA 1_200102	JMA 1	2000-01	2001	2	200102	214,676	0	0	214,676
JMA 1_200103	JMA 1	2000-01	2001	3	200103	183,023	0	0	183,023
JMA 1_200104	JMA 1	2000-01	2001	4	200104	13,700	577	144	14,421
JMA 1_200105	JMA 1	2000-01	2001	5	200105	31,034	1,307	327	32,668
JMA 1_200106	JMA 1	2000-01	2001	6	200106	1,064,001	0	0	1,064,001
JMA 1_200107	JMA 1	2000-01	2001	7	200107	1,310,643	0	0	1,310,643
JMA 1_200108	JMA 1	2000-01	2001	8	200108	1,935,485	0	0	1,935,485
JMA 1_200109	JMA 1	2000-01	2001	9	200109	2,025,739	63,971	42,647	2,132,357
JMA 1_200110	JMA 1	2001-02	2001	10	200110	162,461	245,887	30,736	439,084
JMA 1_200111	JMA 1	2001-02	2001	11	200111	76,626	31,298	0	107,924
JMA 1_200112	JMA 1	2001-02	2001	12	200112	498,979	0	0	498,979
JMA 1_200201	JMA 1	2001-02	2002	1	200201	32,382	0	0	32,382
JMA 1_200202	JMA 1	2001-02	2002	2	200202	14,938	0	0	14,938
JMA 1_200203	JMA 1	2001-02	2002	3	200203	0	181,047	0	181,047
JMA 1_200204	JMA 1	2001-02	2002	4	200204	28,823	382,940	0	411,763
JMA 1_200205	JMA 1	2001-02	2002	5	200205	75,671	114,477	3,881	194,029
JMA 1_200206	JMA 1	2001-02	2002	6	200206	464,167	0	0	464,167
JMA 1_200207	JMA 1	2001-02	2002	7	200207	961,601	0	0	961,601
JMA 1_200208	JMA 1	2001-02	2002	8	200208	421,545	0	0	421,545
JMA 1_200209	JMA 1	2001-02	2002	9	200209	1,519,703	0	0	1,519,703
JMA 1_200210	JMA 1	2002-03	2002	10	200210	86,117	624,345	7,176	717,638
JMA 1_200211	JMA 1	2002-03	2002	11	200211	144,399	266,919	26,254	437,572
JMA 1_200212	JMA 1	2002-03	2002	12	200212	122,875	148,008	8,378	279,261
JMA 1_200301	JMA 1	2002-03	2003	1	200301	292,905	52,935	7,058	352,898
JMA 1_200302	JMA 1	2002-03	2003	2	200302	676,638	35,613	0	712,251
JMA 1_200303	JMA 1	2002-03	2003	3	200303	36,131	0	0	36,131
JMA 1_200304	JMA 1	2002-03	2003	4	200304	3,506	31,553	0	35,059
JMA 1_200305	JMA 1	2002-03	2003	5	200305	14,724	157,761	37,863	210,348
JMA 1_200306	JMA 1	2002-03	2003	6	200306	171,272	0	0	171,272
JMA 1_200307	JMA 1	2002-03	2003	7	200307	892,011	0	0	892,011
JMA 1_200308	JMA 1	2002-03	2003	8	200308	338,740	0	0	338,740
JMA 1_200309	JMA 1	2002-03	2003	9	200309	1,989,178	0	0	1,989,178
JMA 1_200310	JMA 1	2003-04	2003	10	200310	224,428	33,535	0	257,963
JMA 1_200311	JMA 1	2003-04	2003	11	200311	36,842	254,822	15,351	307,015
JMA 1_200312	JMA 1	2003-04	2003	12	200312	439,102	337,771	67,554	844,427
JMA 1_200401	JMA 1	2003-04	2004	1	200401	101,820	0	0	101,820
JMA 1_200402	JMA 1	2003-04	2004	2	200402	76,438	0	0	76,438
JMA 1_200403	JMA 1	2003-04	2004	3	200403	136,557	0	0	136,557
JMA 1_200404	JMA 1	2003-04	2004	4	200404	248,513	0	0	248,513
JMA 1_200405	JMA 1	2003-04	2004	5	200405	1,556,235	81,907	0	1,638,142
JMA 1_200406	JMA 1	2003-04	2004	6	200406	742,869	0	0	742,869
JMA 1_200407	JMA 1	2003-04	2004	7	200407	191,259	0	0	191,259
JMA 1_200408	JMA 1	2003-04	2004	8	200408	0	165,612	3,380	168,992
JMA 1_200409	JMA 1	2003-04	2004	9	200409	134,150	2,065,913	482,941	2,683,004
JMA 1_200410	JMA 1	2004-05	2004	10	200410	389,835	361,310	199,671	950,816
JMA 1_200411	JMA 1	2004-05	2004	11	200411	604,932	573,910	372,266	1,551,108
JMA 1_200412	JMA 1	2004-05	2004	12	200412	65,917	40,401	0	106,318
JMA 1_200501	JMA 1	2004-05	2005	1	200501	390,749	3,947	0	394,696

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 1_200502	JMA 1	2004-05	2005	2	200502	240,227	0	0	240,227
JMA 1_200503	JMA 1	2004-05	2005	3	200503	96,870	0	0	96,870
JMA 1_200504	JMA 1	2004-05	2005	4	200504	58,347	0	0	58,347
JMA 1_200505	JMA 1	2004-05	2005	5	200505	393,801	0	0	393,801
JMA 1_200506	JMA 1	2004-05	2005	6	200506	875,664	0	0	875,664
JMA 1_200507	JMA 1	2004-05	2005	7	200507	73,631	0	0	73,631
JMA 1_200508	JMA 1	2004-05	2005	8	200508	1,511,265	0	0	1,511,265
JMA 1_200509	JMA 1	2004-05	2005	9	200509	3,165,259	0	0	3,165,259
JMA 1_200510	JMA 1	2005-06	2005	10	200510	1,471,842	0	0	1,471,842
JMA 1_200511	JMA 1	2005-06	2005	11	200511	1,838,356	37,517	0	1,875,873
JMA 1_200512	JMA 1	2005-06	2005	12	200512	505,553	0	0	505,553
JMA 1_200601	JMA 1	2005-06	2006	1	200601	200,996	66,999	0	267,995
JMA 1_200602	JMA 1	2005-06	2006	2	200602	46,305	15,435	0	61,740
JMA 1_200603	JMA 1	2005-06	2006	3	200603	252,696	84,232	0	336,928
JMA 1_200604	JMA 1	2005-06	2006	4	200604	525,482	175,161	0	700,643
JMA 1_200605	JMA 1	2005-06	2006	5	200605	195,759	65,253	0	261,012
JMA 1_200606	JMA 1	2005-06	2006	6	200606	982,577	327,526	0	1,310,103
JMA 1_200607	JMA 1	2005-06	2006	7	200607	0	728,067	7,354	735,421
JMA 1_200608	JMA 1	2005-06	2006	8	200608	1,426,804	0	0	1,426,804
JMA 1_200609	JMA 1	2005-06	2006	9	200609	960,387	0	9,701	970,088
JMA 1_200610	JMA 1	2006-07	2006	10	200610	120,925	36,121	0	157,046
JMA 1_200611	JMA 1	2006-07	2006	11	200611	85,777	365,683	0	451,460
JMA 1_200612	JMA 1	2006-07	2006	12	200612	730,271	0	0	730,271
JMA 1_200701	JMA 1	2006-07	2007	1	200701	165,234	36,480	12,875	214,589
JMA 1_200702	JMA 1	2006-07	2007	2	200702	214,534	47,365	16,717	278,616
JMA 1_200703	JMA 1	2006-07	2007	3	200703	191,340	42,244	14,910	248,494
JMA 1_200704	JMA 1	2006-07	2007	4	200704	484,058	106,870	37,719	628,647
JMA 1_200705	JMA 1	2006-07	2007	5	200705	147,099	32,476	11,462	191,037
JMA 1_200706	JMA 1	2006-07	2007	6	200706	357,931	79,024	27,891	464,846
JMA 1_200707	JMA 1	2006-07	2007	7	200707	276,523	61,051	21,547	359,121
JMA 1_200708	JMA 1	2006-07	2007	8	200708	10,443	2,306	814	13,563
JMA 1_200709	JMA 1	2006-07	2007	9	200709	217,743	979,845	357,721	1,555,309
JMA 1_200710	JMA 1	2007-08	2007	10	200710	1,267,543	0	0	1,267,543
JMA 1_200711	JMA 1	2007-08	2007	11	200711	2,754,651	56,217	0	2,810,868
JMA 1_200712	JMA 1	2007-08	2007	12	200712	575,930	0	0	575,930
JMA 1_200801	JMA 1	2007-08	2008	1	200801	77,154	65,663	21,340	164,157
JMA 1_200802	JMA 1	2007-08	2008	2	200802	39,262	33,415	10,860	83,537
JMA 1_200803	JMA 1	2007-08	2008	3	200803	3,592	3,057	993	7,642
JMA 1_200804	JMA 1	2007-08	2008	4	200804	87,216	74,226	24,123	185,565
JMA 1_200805	JMA 1	2007-08	2008	5	200805	243,274	207,042	67,289	517,605
JMA 1_200806	JMA 1	2007-08	2008	6	200806	598,304	509,195	165,488	1,272,987
JMA 1_200807	JMA 1	2007-08	2008	7	200807	260,728	221,896	72,116	554,740
JMA 1_200808	JMA 1	2007-08	2008	8	200808	52,591	44,758	14,546	111,895
JMA 1_200809	JMA 1	2007-08	2008	9	200809	1,373,522	2,132,573	108,436	3,614,531
JMA 1_200810	JMA 1	2008-09	2008	10	200810	1,769,795	558,883	776,226	3,104,904
JMA 1_200811	JMA 1	2008-09	2008	11	200811	516,560	439,626	142,878	1,099,064
JMA 1_200812	JMA 1	2008-09	2008	12	200812	1,349,547	1,148,550	373,279	2,871,376
JMA 1_200901	JMA 1	2008-09	2009	1	200901	19,170	0	0	19,170
JMA 1_200902	JMA 1	2008-09	2009	2	200902	16,222	0	0	16,222
JMA 1_200903	JMA 1	2008-09	2009	3	200903	11,229	0	0	11,229
JMA 1_200904	JMA 1	2008-09	2009	4	200904	15,557	0	0	15,557
JMA 1_200905	JMA 1	2008-09	2009	5	200905	39,246	0	0	39,246
JMA 1_200906	JMA 1	2008-09	2009	6	200906	274,976	0	0	274,976
JMA 1_200907	JMA 1	2008-09	2009	7	200907	856,617	0	0	856,617
JMA 1_200908	JMA 1	2008-09	2009	8	200908	437,167	0	0	437,167
JMA 1_200909	JMA 1	2008-09	2009	9	200909	1,045,471	0	0	1,045,471
JMA 1_200910	JMA 1	2009-10	2009	10	200910	2,782,366	0	0	2,782,366
JMA 1_200911	JMA 1	2009-10	2009	11	200911	152,039	0	0	152,039
JMA 1_200912	JMA 1	2009-10	2009	12	200912	1,825,510	0	0	1,825,510
JMA 1_201001	JMA 1	2009-10	2010	1	201001	22,425	0	0	22,425

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 1_201002	JMA 1	2009-10	2010	2	201002	212,089	0	0	212,089
JMA 1_201003	JMA 1	2009-10	2010	3	201003	329,083	0	0	329,083
JMA 1_201004	JMA 1	2009-10	2010	4	201004	171,129	0	0	171,129
JMA 1_201005	JMA 1	2009-10	2010	5	201005	463,122	0	0	463,122
JMA 1_201006	JMA 1	2009-10	2010	6	201006	30,858	0	0	30,858
JMA 1_201007	JMA 1	2009-10	2010	7	201007	1,481,143	0	0	1,481,143
JMA 1_201008	JMA 1	2009-10	2010	8	201008	860,116	0	0	860,116
JMA 1_201009	JMA 1	2009-10	2010	9	201009	756,052	0	0	756,052
JMA 1_201010	JMA 1	2010-11	2010	10	201010	2,741,912	0	0	2,741,912
JMA 1_201011	JMA 1	2010-11	2010	11	201011	2,176,608	0	0	2,176,608
JMA 1_201012	JMA 1	2010-11	2010	12	201012	617,393	0	0	617,393
JMA 3_198510	JMA 3	1985-86	1985	10	198510	0	0	45,058	45,058
JMA 3_198511	JMA 3	1985-86	1985	11	198511	0	0	216,569	216,569
JMA 3_198512	JMA 3	1985-86	1985	12	198512	0	0	105,275	105,275
JMA 3_198601	JMA 3	1985-86	1986	1	198601	0	0	69,066	69,066
JMA 3_198602	JMA 3	1985-86	1986	2	198602	0	0	197,542	197,542
JMA 3_198603	JMA 3	1985-86	1986	3	198603	0	0	331,735	331,735
JMA 3_198604	JMA 3	1985-86	1986	4	198604	0	0	522,258	522,258
JMA 3_198605	JMA 3	1985-86	1986	5	198605	0	0	376,471	376,471
JMA 3_198606	JMA 3	1985-86	1986	6	198606	0	0	420,174	420,174
JMA 3_198607	JMA 3	1985-86	1986	7	198607	0	0	8,917	8,917
JMA 3_198608	JMA 3	1985-86	1986	8	198608	0	0	1,667	1,667
JMA 3_198609	JMA 3	1985-86	1986	9	198609	0	0	28,702	28,702
JMA 3_198610	JMA 3	1986-87	1986	10	198610	0	0	75,189	75,189
JMA 3_198611	JMA 3	1986-87	1986	11	198611	0	0	84,144	84,144
JMA 3_198612	JMA 3	1986-87	1986	12	198612	0	0	89,990	89,990
JMA 3_198701	JMA 3	1986-87	1987	1	198701	4,910	18,471	0	23,381
JMA 3_198702	JMA 3	1986-87	1987	2	198702	30,926	116,340	0	147,266
JMA 3_198703	JMA 3	1986-87	1987	3	198703	56,995	190,811	0	247,806
JMA 3_198704	JMA 3	1986-87	1987	4	198704	82,147	309,031	0	391,178
JMA 3_198705	JMA 3	1986-87	1987	5	198705	48,743	183,366	0	232,109
JMA 3_198706	JMA 3	1986-87	1987	6	198706	39,365	139,569	0	178,934
JMA 3_198707	JMA 3	1986-87	1987	7	198707	382	1,437	0	1,819
JMA 3_198708	JMA 3	1986-87	1987	8	198708	165	620	0	785
JMA 3_198709	JMA 3	1986-87	1987	9	198709	34,734	130,664	0	165,398
JMA 3_198710	JMA 3	1987-88	1987	10	198710	27	103	0	130
JMA 3_198711	JMA 3	1987-88	1987	11	198711	20,591	77,460	0	98,051
JMA 3_198712	JMA 3	1987-88	1987	12	198712	29,051	109,289	0	138,340
JMA 3_198801	JMA 3	1987-88	1988	1	198801	10,142	96,351	400,617	507,110
JMA 3_198802	JMA 3	1987-88	1988	2	198802	10,020	95,185	395,770	500,975
JMA 3_198803	JMA 3	1987-88	1988	3	198803	2,678	25,441	105,782	133,901
JMA 3_198804	JMA 3	1987-88	1988	4	198804	2,022	19,214	79,888	101,124
JMA 3_198805	JMA 3	1987-88	1988	5	198805	3,443	32,705	135,983	172,131
JMA 3_198806	JMA 3	1987-88	1988	6	198806	2,928	27,817	115,662	146,407
JMA 3_198807	JMA 3	1987-88	1988	7	198807	1,595	15,149	62,988	79,732
JMA 3_198808	JMA 3	1987-88	1988	8	198808	27	254	1,055	1,336
JMA 3_198809	JMA 3	1987-88	1988	9	198809	75	715	2,974	3,764
JMA 3_198810	JMA 3	1988-89	1988	10	198810	1,036	9,840	40,915	51,791
JMA 3_198811	JMA 3	1988-89	1988	11	198811	2,972	28,233	117,390	148,595
JMA 3_198812	JMA 3	1988-89	1988	12	198812	2,274	21,603	89,823	113,700
JMA 3_198901	JMA 3	1988-89	1989	1	198901	0	825	6,047	6,872
JMA 3_198902	JMA 3	1988-89	1989	2	198902	0	0	263,664	263,664
JMA 3_198903	JMA 3	1988-89	1989	3	198903	0	32,136	235,661	267,797
JMA 3_198904	JMA 3	1988-89	1989	4	198904	0	41,562	304,786	346,348
JMA 3_198905	JMA 3	1988-89	1989	5	198905	0	66,294	486,158	552,452
JMA 3_198906	JMA 3	1988-89	1989	6	198906	0	15,531	113,892	129,423
JMA 3_198907	JMA 3	1988-89	1989	7	198907	0	3,172	23,261	26,433
JMA 3_198908	JMA 3	1988-89	1989	8	198908	0	89	656	745
JMA 3_198909	JMA 3	1988-89	1989	9	198909	0	1,352	9,915	11,267
JMA 3_198910	JMA 3	1989-90	1989	10	198910	0	1,523	11,165	12,688

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 3_198911	JMA 3	1989-90	1989	11	198911	0	49,738	116,055	165,793
JMA 3_198912	JMA 3	1989-90	1989	12	198912	0	11,464	84,073	95,537
JMA 3_199001	JMA 3	1989-90	1990	1	199001	0	0	190,387	190,387
JMA 3_199002	JMA 3	1989-90	1990	2	199002	0	0	875,314	875,314
JMA 3_199003	JMA 3	1989-90	1990	3	199003	0	0	718,418	718,418
JMA 3_199004	JMA 3	1989-90	1990	4	199004	0	0	440,894	440,894
JMA 3_199005	JMA 3	1989-90	1990	5	199005	0	0	1,048,683	1,048,683
JMA 3_199006	JMA 3	1989-90	1990	6	199006	0	0	354,119	354,119
JMA 3_199007	JMA 3	1989-90	1990	7	199007	0	0	29,188	29,188
JMA 3_199008	JMA 3	1989-90	1990	8	199008	0	0	7,506	7,506
JMA 3_199009	JMA 3	1989-90	1990	9	199009	0	0	86,105	86,105
JMA 3_199010	JMA 3	1990-91	1990	10	199010	0	0	20,852	20,852
JMA 3_199011	JMA 3	1990-91	1990	11	199011	0	0	252,067	252,067
JMA 3_199012	JMA 3	1990-91	1990	12	199012	0	0	657,704	657,704
JMA 3_199101	JMA 3	1990-91	1991	1	199101	0	0	721,872	721,872
JMA 3_199102	JMA 3	1990-91	1991	2	199102	0	0	1,079,728	1,079,728
JMA 3_199103	JMA 3	1990-91	1991	3	199103	0	0	1,180,999	1,180,999
JMA 3_199104	JMA 3	1990-91	1991	4	199104	0	0	1,294,798	1,294,798
JMA 3_199105	JMA 3	1990-91	1991	5	199105	0	0	909,063	909,063
JMA 3_199106	JMA 3	1990-91	1991	6	199106	0	0	145,459	145,459
JMA 3_199107	JMA 3	1990-91	1991	7	199107	0	0	45,257	45,257
JMA 3_199108	JMA 3	1990-91	1991	8	199108	0	0	6,188	6,188
JMA 3_199109	JMA 3	1990-91	1991	9	199109	0	0	89,013	89,013
JMA 3_199110	JMA 3	1991-92	1991	10	199110	0	457	45,290	45,747
JMA 3_199111	JMA 3	1991-92	1991	11	199111	0	0	232,088	232,088
JMA 3_199112	JMA 3	1991-92	1991	12	199112	0	0	672,514	672,514
JMA 3_199201	JMA 3	1991-92	1992	1	199201	0	0	1,392,731	1,392,731
JMA 3_199202	JMA 3	1991-92	1992	2	199202	0	0	480,660	480,660
JMA 3_199203	JMA 3	1991-92	1992	3	199203	0	0	1,065,687	1,065,687
JMA 3_199204	JMA 3	1991-92	1992	4	199204	0	0	1,049,283	1,049,283
JMA 3_199205	JMA 3	1991-92	1992	5	199205	0	0	369,432	369,432
JMA 3_199206	JMA 3	1991-92	1992	6	199206	0	0	106,091	106,091
JMA 3_199207	JMA 3	1991-92	1992	7	199207	0	0	294,480	294,480
JMA 3_199208	JMA 3	1991-92	1992	8	199208	0	0	10,203	10,203
JMA 3_199209	JMA 3	1991-92	1992	9	199209	0	0	60,085	60,085
JMA 3_199210	JMA 3	1992-93	1992	10	199210	0	0	5,639	5,639
JMA 3_199211	JMA 3	1992-93	1992	11	199211	0	0	6,643	6,643
JMA 3_199212	JMA 3	1992-93	1992	12	199212	0	0	56,441	56,441
JMA 3_199301	JMA 3	1992-93	1993	1	199301	0	3,747,860	0	3,747,860
JMA 3_199302	JMA 3	1992-93	1993	2	199302	0	0	1,120,855	1,120,855
JMA 3_199303	JMA 3	1992-93	1993	3	199303	0	0	2,394,044	2,394,044
JMA 3_199304	JMA 3	1992-93	1993	4	199304	0	644,005	2,745,496	3,389,501
JMA 3_199305	JMA 3	1992-93	1993	5	199305	0	0	3,601,695	3,601,695
JMA 3_199306	JMA 3	1992-93	1993	6	199306	0	245,670	573,231	818,901
JMA 3_199307	JMA 3	1992-93	1993	7	199307	0	55,154	128,692	183,846
JMA 3_199308	JMA 3	1992-93	1993	8	199308	0	29,299	68,365	97,664
JMA 3_199309	JMA 3	1992-93	1993	9	199309	0	813	1,897	2,710
JMA 3_199310	JMA 3	1993-94	1993	10	199310	0	4,851	11,318	16,169
JMA 3_199311	JMA 3	1993-94	1993	11	199311	0	0	287,374	287,374
JMA 3_199312	JMA 3	1993-94	1993	12	199312	0	115,907	270,449	386,356
JMA 3_199401	JMA 3	1993-94	1994	1	199401	0	892,368	1,986,240	2,878,608
JMA 3_199402	JMA 3	1993-94	1994	2	199402	0	0	319,757	319,757
JMA 3_199403	JMA 3	1993-94	1994	3	199403	0	763,236	145,378	908,614
JMA 3_199404	JMA 3	1993-94	1994	4	199404	0	847,182	297,658	1,144,840
JMA 3_199405	JMA 3	1993-94	1994	5	199405	0	0	2,164,418	2,164,418
JMA 3_199406	JMA 3	1993-94	1994	6	199406	0	0	702,589	702,589
JMA 3_199407	JMA 3	1993-94	1994	7	199407	0	88,431	196,830	285,261
JMA 3_199408	JMA 3	1993-94	1994	8	199408	0	3,793	8,443	12,236
JMA 3_199409	JMA 3	1993-94	1994	9	199409	0	2,721	6,057	8,778
JMA 3_199410	JMA 3	1994-95	1994	10	199410	0	10,391	23,128	33,519

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 3_199411	JMA 3	1994-95	1994	11	199411	0	1,778	3,958	5,736
JMA 3_199412	JMA 3	1994-95	1994	12	199412	0	34,233	76,196	110,429
JMA 3_199501	JMA 3	1994-95	1995	1	199501	0	102,957	3,328,937	3,431,894
JMA 3_199502	JMA 3	1994-95	1995	2	199502	0	0	562,843	562,843
JMA 3_199503	JMA 3	1994-95	1995	3	199503	0	0	1,692,564	1,692,564
JMA 3_199504	JMA 3	1994-95	1995	4	199504	0	51,633	685,975	737,608
JMA 3_199505	JMA 3	1994-95	1995	5	199505	0	158,446	3,802,703	3,961,149
JMA 3_199506	JMA 3	1994-95	1995	6	199506	0	18,983	613,770	632,753
JMA 3_199507	JMA 3	1994-95	1995	7	199507	0	9,721	314,307	324,028
JMA 3_199508	JMA 3	1994-95	1995	8	199508	0	252	8,147	8,399
JMA 3_199509	JMA 3	1994-95	1995	9	199509	0	542	17,537	18,079
JMA 3_199510	JMA 3	1995-96	1995	10	199510	0	458	14,807	15,265
JMA 3_199511	JMA 3	1995-96	1995	11	199511	0	1,950	63,043	64,993
JMA 3_199512	JMA 3	1995-96	1995	12	199512	0	7,304	236,169	243,473
JMA 3_199601	JMA 3	1995-96	1996	1	199601	0	95,443	4,676,725	4,772,168
JMA 3_199602	JMA 3	1995-96	1996	2	199602	0	0	2,501,365	2,501,365
JMA 3_199603	JMA 3	1995-96	1996	3	199603	0	26,723	2,645,570	2,672,293
JMA 3_199604	JMA 3	1995-96	1996	4	199604	0	39,267	3,887,452	3,926,719
JMA 3_199605	JMA 3	1995-96	1996	5	199605	0	0	4,666,101	4,666,101
JMA 3_199606	JMA 3	1995-96	1996	6	199606	0	7,782	770,442	778,224
JMA 3_199607	JMA 3	1995-96	1996	7	199607	0	1,441	142,630	144,071
JMA 3_199608	JMA 3	1995-96	1996	8	199608	0	141	13,980	14,121
JMA 3_199609	JMA 3	1995-96	1996	9	199609	0	42	4,165	4,207
JMA 3_199610	JMA 3	1996-97	1996	10	199610	0	40	3,935	3,975
JMA 3_199611	JMA 3	1996-97	1996	11	199611	0	13,768	1,363,013	1,376,781
JMA 3_199612	JMA 3	1996-97	1996	12	199612	0	8,677	859,059	867,736
JMA 3_199701	JMA 3	1996-97	1997	1	199701	0	0	1,949,843	1,949,843
JMA 3_199702	JMA 3	1996-97	1997	2	199702	0	0	901,829	901,829
JMA 3_199703	JMA 3	1996-97	1997	3	199703	0	0	1,860,699	1,860,699
JMA 3_199704	JMA 3	1996-97	1997	4	199704	0	0	4,044,400	4,044,400
JMA 3_199705	JMA 3	1996-97	1997	5	199705	0	28,961	2,867,179	2,896,140
JMA 3_199706	JMA 3	1996-97	1997	6	199706	0	0	1,238,451	1,238,451
JMA 3_199707	JMA 3	1996-97	1997	7	199707	0	0	533,257	533,257
JMA 3_199708	JMA 3	1996-97	1997	8	199708	0	0	942	942
JMA 3_199709	JMA 3	1996-97	1997	9	199709	0	0	12,945	12,945
JMA 3_199710	JMA 3	1997-98	1997	10	199710	0	0	41,715	41,715
JMA 3_199711	JMA 3	1997-98	1997	11	199711	0	0	178,481	178,481
JMA 3_199712	JMA 3	1997-98	1997	12	199712	0	7,481	366,559	374,040
JMA 3_199801	JMA 3	1997-98	1998	1	199801	0	78,195	2,528,303	2,606,498
JMA 3_199802	JMA 3	1997-98	1998	2	199802	0	0	881,602	881,602
JMA 3_199803	JMA 3	1997-98	1998	3	199803	0	27,534	2,725,879	2,753,413
JMA 3_199804	JMA 3	1997-98	1998	4	199804	0	87,507	2,100,164	2,187,671
JMA 3_199805	JMA 3	1997-98	1998	5	199805	0	114,456	5,608,351	5,722,807
JMA 3_199806	JMA 3	1997-98	1998	6	199806	0	9,168	449,240	458,408
JMA 3_199807	JMA 3	1997-98	1998	7	199807	0	4,877	238,986	243,863
JMA 3_199808	JMA 3	1997-98	1998	8	199808	0	17	820	837
JMA 3_199809	JMA 3	1997-98	1998	9	199809	0	53	2,611	2,664
JMA 3_199810	JMA 3	1998-99	1998	10	199810	0	77	3,792	3,869
JMA 3_199811	JMA 3	1998-99	1998	11	199811	0	620	30,393	31,013
JMA 3_199812	JMA 3	1998-99	1998	12	199812	0	1,774	86,912	88,686
JMA 3_199901	JMA 3	1998-99	1999	1	199901	0	493,741	2,592,141	3,085,882
JMA 3_199902	JMA 3	1998-99	1999	2	199902	0	124,215	703,887	828,102
JMA 3_199903	JMA 3	1998-99	1999	3	199903	0	527,659	2,990,067	3,517,726
JMA 3_199904	JMA 3	1998-99	1999	4	199904	0	851,703	4,471,442	5,323,145
JMA 3_199905	JMA 3	1998-99	1999	5	199905	0	184,982	971,158	1,156,140
JMA 3_199906	JMA 3	1998-99	1999	6	199906	0	110,366	579,422	689,788
JMA 3_199907	JMA 3	1998-99	1999	7	199907	0	56,080	294,418	350,498
JMA 3_199908	JMA 3	1998-99	1999	8	199908	0	416	2,182	2,598
JMA 3_199909	JMA 3	1998-99	1999	9	199909	0	5,368	28,184	33,552
JMA 3_199910	JMA 3	1999-00	1999	10	199910	0	4,714	24,749	29,463

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 3_199911	JMA 3	1999-00	1999	11	199911	0	34,115	179,106	213,221
JMA 3_199912	JMA 3	1999-00	1999	12	199912	0	111,140	583,487	694,627
JMA 3_200001	JMA 3	1999-00	2000	1	200001	14,953	792,496	687,827	1,495,276
JMA 3_200002	JMA 3	1999-00	2000	2	200002	0	101,308	1,924,844	2,026,152
JMA 3_200003	JMA 3	1999-00	2000	3	200003	117,503	470,012	587,516	1,175,031
JMA 3_200004	JMA 3	1999-00	2000	4	200004	0	3,546,464	0	3,546,464
JMA 3_200005	JMA 3	1999-00	2000	5	200005	0	0	1,033,262	1,033,262
JMA 3_200006	JMA 3	1999-00	2000	6	200006	0	0	56,344	56,344
JMA 3_200007	JMA 3	1999-00	2000	7	200007	136	7,225	6,271	13,632
JMA 3_200008	JMA 3	1999-00	2000	8	200008	6	321	279	606
JMA 3_200009	JMA 3	1999-00	2000	9	200009	219	11,619	10,085	21,923
JMA 3_200010	JMA 3	2000-01	2000	10	200010	0	24,140	0	24,140
JMA 3_200011	JMA 3	2000-01	2000	11	200011	2,871	152,145	132,050	287,066
JMA 3_200012	JMA 3	2000-01	2000	12	200012	253	13,406	11,636	25,295
JMA 3_200101	JMA 3	2000-01	2001	1	200101	0	0	409,329	409,329
JMA 3_200102	JMA 3	2000-01	2001	2	200102	0	0	102,732	102,732
JMA 3_200103	JMA 3	2000-01	2001	3	200103	0	53,961	202,995	256,956
JMA 3_200104	JMA 3	2000-01	2001	4	200104	0	278,296	516,836	795,132
JMA 3_200105	JMA 3	2000-01	2001	5	200105	0	0	751,118	751,118
JMA 3_200106	JMA 3	2000-01	2001	6	200106	0	4,570	28,073	32,643
JMA 3_200107	JMA 3	2000-01	2001	7	200107	0	2,081	12,785	14,866
JMA 3_200108	JMA 3	2000-01	2001	8	200108	0	104	636	740
JMA 3_200109	JMA 3	2000-01	2001	9	200109	0	0	43,881	43,881
JMA 3_200110	JMA 3	2001-02	2001	10	200110	0	8,331	11,504	19,835
JMA 3_200111	JMA 3	2001-02	2001	11	200111	0	19,387	119,090	138,477
JMA 3_200112	JMA 3	2001-02	2001	12	200112	0	2,041	12,537	14,578
JMA 3_200201	JMA 3	2001-02	2002	1	200201	1,887	33,967	152,851	188,705
JMA 3_200202	JMA 3	2001-02	2002	2	200202	23,423	187,381	374,762	585,566
JMA 3_200203	JMA 3	2001-02	2002	3	200203	0	332,315	294,695	627,010
JMA 3_200204	JMA 3	2001-02	2002	4	200204	0	250,700	752,101	1,002,801
JMA 3_200205	JMA 3	2001-02	2002	5	200205	0	0	2,148,571	2,148,571
JMA 3_200206	JMA 3	2001-02	2002	6	200206	2,372	42,694	192,121	237,187
JMA 3_200207	JMA 3	2001-02	2002	7	200207	62	1,112	5,006	6,180
JMA 3_200208	JMA 3	2001-02	2002	8	200208	6	110	496	612
JMA 3_200209	JMA 3	2001-02	2002	9	200209	306	5,514	24,813	30,633
JMA 3_200210	JMA 3	2002-03	2002	10	200210	360	6,482	29,168	36,010
JMA 3_200211	JMA 3	2002-03	2002	11	200211	364	6,554	29,494	36,412
JMA 3_200212	JMA 3	2002-03	2002	12	200212	0	0	35,778	35,778
JMA 3_200301	JMA 3	2002-03	2003	1	200301	0	0	57,306	57,306
JMA 3_200302	JMA 3	2002-03	2003	2	200302	0	0	18,765	18,765
JMA 3_200303	JMA 3	2002-03	2003	3	200303	0	4,841	156,540	161,381
JMA 3_200304	JMA 3	2002-03	2003	4	200304	0	941,540	153,274	1,094,814
JMA 3_200305	JMA 3	2002-03	2003	5	200305	0	478,045	204,876	682,921
JMA 3_200306	JMA 3	2002-03	2003	6	200306	0	42,466	18,200	60,666
JMA 3_200307	JMA 3	2002-03	2003	7	200307	0	20,420	8,752	29,172
JMA 3_200308	JMA 3	2002-03	2003	8	200308	0	473	203	676
JMA 3_200309	JMA 3	2002-03	2003	9	200309	0	0	11,230	11,230
JMA 3_200310	JMA 3	2003-04	2003	10	200310	0	8,129	3,484	11,613
JMA 3_200311	JMA 3	2003-04	2003	11	200311	0	7,534	3,229	10,763
JMA 3_200312	JMA 3	2003-04	2003	12	200312	0	3,363	1,441	4,804
JMA 3_200401	JMA 3	2003-04	2004	1	200401	0	1,289	20,188	21,477
JMA 3_200402	JMA 3	2003-04	2004	2	200402	0	7,596	32,383	39,979
JMA 3_200403	JMA 3	2003-04	2004	3	200403	0	0	80,675	80,675
JMA 3_200404	JMA 3	2003-04	2004	4	200404	0	11,922	186,771	198,693
JMA 3_200405	JMA 3	2003-04	2004	5	200405	0	17,874	280,019	297,893
JMA 3_200406	JMA 3	2003-04	2004	6	200406	0	1,111	17,404	18,515
JMA 3_200407	JMA 3	2003-04	2004	7	200407	0	122	1,918	2,040
JMA 3_200408	JMA 3	2003-04	2004	8	200408	0	2	24	26
JMA 3_200409	JMA 3	2003-04	2004	9	200409	0	1,117	17,502	18,619
JMA 3_200410	JMA 3	2004-05	2004	10	200410	0	340	5,325	5,665

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 3_200411	JMA 3	2004-05	2004	11	200411	0	486	7,622	8,108
JMA 3_200412	JMA 3	2004-05	2004	12	200412	0	26	402	428
JMA 3_200501	JMA 3	2004-05	2005	1	200501	0	366	6,948	7,314
JMA 3_200502	JMA 3	2004-05	2005	2	200502	0	0	7,722	7,722
JMA 3_200503	JMA 3	2004-05	2005	3	200503	0	32,175	33,489	65,664
JMA 3_200504	JMA 3	2004-05	2005	4	200504	0	0	242,344	242,344
JMA 3_200505	JMA 3	2004-05	2005	5	200505	0	0	334,295	334,295
JMA 3_200506	JMA 3	2004-05	2005	6	200506	0	1,476	28,047	29,523
JMA 3_200507	JMA 3	2004-05	2005	7	200507	0	527	10,022	10,549
JMA 3_200508	JMA 3	2004-05	2005	8	200508	0	23	428	451
JMA 3_200509	JMA 3	2004-05	2005	9	200509	0	197	3,741	3,938
JMA 3_200510	JMA 3	2005-06	2005	10	200510	0	754	14,330	15,084
JMA 3_200511	JMA 3	2005-06	2005	11	200511	0	1,903	36,163	38,066
JMA 3_200512	JMA 3	2005-06	2005	12	200512	0	705	13,400	14,105
JMA 3_200601	JMA 3	2005-06	2006	1	200601	0	1,724	2,286	4,010
JMA 3_200602	JMA 3	2005-06	2006	2	200602	0	35,531	68,973	104,504
JMA 3_200603	JMA 3	2005-06	2006	3	200603	115,689	437,964	272,695	826,348
JMA 3_200604	JMA 3	2005-06	2006	4	200604	229,018	954,243	725,225	1,908,486
JMA 3_200605	JMA 3	2005-06	2006	5	200605	104,979	437,415	332,435	874,829
JMA 3_200606	JMA 3	2005-06	2006	6	200606	55,822	232,593	176,770	465,185
JMA 3_200607	JMA 3	2005-06	2006	7	200607	68,391	284,964	216,572	569,927
JMA 3_200608	JMA 3	2005-06	2006	8	200608	0	57	579	636
JMA 3_200609	JMA 3	2005-06	2006	9	200609	21,458	89,410	67,952	178,820
JMA 3_200610	JMA 3	2006-07	2006	10	200610	0	4,578	28,124	32,702
JMA 3_200611	JMA 3	2006-07	2006	11	200611	3,053	12,720	9,667	25,440
JMA 3_200612	JMA 3	2006-07	2006	12	200612	477	1,987	1,510	3,974
JMA 3_200701	JMA 3	2006-07	2007	1	200701	0	541	3,964	4,505
JMA 3_200702	JMA 3	2006-07	2007	2	200702	0	0	4,849	4,849
JMA 3_200703	JMA 3	2006-07	2007	3	200703	0	8,021	192,504	200,525
JMA 3_200704	JMA 3	2006-07	2007	4	200704	0	111,821	420,662	532,483
JMA 3_200705	JMA 3	2006-07	2007	5	200705	0	0	526,414	526,414
JMA 3_200706	JMA 3	2006-07	2007	6	200706	0	21,607	158,448	180,055
JMA 3_200707	JMA 3	2006-07	2007	7	200707	0	6,660	48,837	55,497
JMA 3_200708	JMA 3	2006-07	2007	8	200708	0	6,693	49,086	55,779
JMA 3_200709	JMA 3	2006-07	2007	9	200709	0	28,173	206,602	234,775
JMA 3_200710	JMA 3	2007-08	2007	10	200710	0	20,105	147,440	167,545
JMA 3_200711	JMA 3	2007-08	2007	11	200711	0	3,230	23,687	26,917
JMA 3_200712	JMA 3	2007-08	2007	12	200712	0	31,475	11,642	43,117
JMA 3_200801	JMA 3	2007-08	2008	1	200801	0	44,349	296,797	341,146
JMA 3_200802	JMA 3	2007-08	2008	2	200802	0	528	3,530	4,058
JMA 3_200803	JMA 3	2007-08	2008	3	200803	0	17,389	49,490	66,879
JMA 3_200804	JMA 3	2007-08	2008	4	200804	0	178,111	151,725	329,836
JMA 3_200805	JMA 3	2007-08	2008	5	200805	0	66,912	447,793	514,705
JMA 3_200806	JMA 3	2007-08	2008	6	200806	0	9,542	181,289	190,831
JMA 3_200807	JMA 3	2007-08	2008	7	200807	0	0	41,697	41,697
JMA 3_200808	JMA 3	2007-08	2008	8	200808	0	0	52,885	52,885
JMA 3_200809	JMA 3	2007-08	2008	9	200809	0	0	849,384	849,384
JMA 3_200810	JMA 3	2008-09	2008	10	200810	0	4,427	29,628	34,055
JMA 3_200811	JMA 3	2008-09	2008	11	200811	0	5,705	38,183	43,888
JMA 3_200812	JMA 3	2008-09	2008	12	200812	0	54	360	414
JMA 3_200901	JMA 3	2008-09	2009	1	200901	0	4,582	18,327	22,909
JMA 3_200902	JMA 3	2008-09	2009	2	200902	0	846	41,455	42,301
JMA 3_200903	JMA 3	2008-09	2009	3	200903	0	0	645,113	645,113
JMA 3_200904	JMA 3	2008-09	2009	4	200904	0	182,668	15,884	198,552
JMA 3_200905	JMA 3	2008-09	2009	5	200905	0	108,580	434,318	542,898
JMA 3_200906	JMA 3	2008-09	2009	6	200906	0	20,383	81,532	101,915
JMA 3_200907	JMA 3	2008-09	2009	7	200907	0	4,825	19,302	24,127
JMA 3_200908	JMA 3	2008-09	2009	8	200908	0	0	19,694	19,694
JMA 3_200909	JMA 3	2008-09	2009	9	200909	0	57,627	230,507	288,134
JMA 3_200910	JMA 3	2009-10	2009	10	200910	0	1,302	17,300	18,602

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 3_200911	JMA 3	2009-10	2009	11	200911	0	9,029	36,118	45,147
JMA 3_200912	JMA 3	2009-10	2009	12	200912	0	1,735	6,942	8,677
JMA 3_201001	JMA 3	2009-10	2010	1	201001	0	0	44,582	44,582
JMA 3_201002	JMA 3	2009-10	2010	2	201002	0	41,023	186,880	227,903
JMA 3_201003	JMA 3	2009-10	2010	3	201003	12,235	709,653	501,651	1,223,539
JMA 3_201004	JMA 3	2009-10	2010	4	201004	7,778	388,910	381,131	777,819
JMA 3_201005	JMA 3	2009-10	2010	5	201005	2,686	134,279	131,593	268,558
JMA 3_201006	JMA 3	2009-10	2010	6	201006	261	13,026	12,765	26,052
JMA 3_201007	JMA 3	2009-10	2010	7	201007	63	3,142	3,079	6,284
JMA 3_201008	JMA 3	2009-10	2010	8	201008	0	20	19	39
JMA 3_201009	JMA 3	2009-10	2010	9	201009	590	29,478	28,888	58,956
JMA 3_201010	JMA 3	2010-11	2010	10	201010	514	25,681	25,167	51,362
JMA 3_201011	JMA 3	2010-11	2010	11	201011	42	2,117	2,075	4,234
JMA 3_201012	JMA 3	2010-11	2010	12	201012	63	3,142	3,079	6,284
JMA 7_198510	JMA 7	1985-86	1985	10	198510	383,222	814,347	0	1,197,569
JMA 7_198511	JMA 7	1985-86	1985	11	198511	551,537	1,172,016	0	1,723,553
JMA 7_198512	JMA 7	1985-86	1985	12	198512	1,074,991	2,284,356	0	3,359,347
JMA 7_198601	JMA 7	1985-86	1986	1	198601	798,888	1,149,619	0	1,948,507
JMA 7_198602	JMA 7	1985-86	1986	2	198602	42,991	61,864	0	104,855
JMA 7_198603	JMA 7	1985-86	1986	3	198603	53,388	76,827	0	130,215
JMA 7_198604	JMA 7	1985-86	1986	4	198604	20,648	29,713	0	50,361
JMA 7_198605	JMA 7	1985-86	1986	5	198605	274,635	395,206	0	669,841
JMA 7_198606	JMA 7	1985-86	1986	6	198606	263,376	379,004	0	642,380
JMA 7_198607	JMA 7	1985-86	1986	7	198607	39,314	56,575	0	95,889
JMA 7_198608	JMA 7	1985-86	1986	8	198608	61,408	88,368	0	149,776
JMA 7_198609	JMA 7	1985-86	1986	9	198609	410,787	591,133	0	1,001,920
JMA 7_198610	JMA 7	1986-87	1986	10	198610	91,676	131,925	0	223,601
JMA 7_198611	JMA 7	1986-87	1986	11	198611	600,456	1,115,132	0	1,715,588
JMA 7_198612	JMA 7	1986-87	1986	12	198612	2,522,296	3,343,509	0	5,865,805
JMA 7_198701	JMA 7	1986-87	1987	1	198701	2,786,884	3,271,560	0	6,058,444
JMA 7_198702	JMA 7	1986-87	1987	2	198702	60,578	49,563	0	110,141
JMA 7_198703	JMA 7	1986-87	1987	3	198703	257,152	210,397	0	467,549
JMA 7_198704	JMA 7	1986-87	1987	4	198704	1,295,316	112,636	0	1,407,952
JMA 7_198705	JMA 7	1986-87	1987	5	198705	1,609,022	722,894	0	2,331,916
JMA 7_198706	JMA 7	1986-87	1987	6	198706	218,323	178,628	0	396,951
JMA 7_198707	JMA 7	1986-87	1987	7	198707	124,042	101,489	0	225,531
JMA 7_198708	JMA 7	1986-87	1987	8	198708	30,031	24,570	0	54,601
JMA 7_198709	JMA 7	1986-87	1987	9	198709	526,305	430,614	0	956,919
JMA 7_198710	JMA 7	1987-88	1987	10	198710	343,633	281,154	0	624,787
JMA 7_198711	JMA 7	1987-88	1987	11	198711	5,097	504,566	0	509,663
JMA 7_198712	JMA 7	1987-88	1987	12	198712	927,145	758,574	0	1,685,719
JMA 7_198801	JMA 7	1987-88	1988	1	198801	1,407,177	1,524,442	0	2,931,619
JMA 7_198802	JMA 7	1987-88	1988	2	198802	142,034	1,633,386	0	1,775,420
JMA 7_198803	JMA 7	1987-88	1988	3	198803	540,366	254,290	0	794,656
JMA 7_198804	JMA 7	1987-88	1988	4	198804	1,156,625	1,664,411	0	2,821,036
JMA 7_198805	JMA 7	1987-88	1988	5	198805	832,775	1,198,384	0	2,031,159
JMA 7_198806	JMA 7	1987-88	1988	6	198806	1,182,033	1,700,974	0	2,883,007
JMA 7_198807	JMA 7	1987-88	1988	7	198807	168,894	243,042	0	411,936
JMA 7_198808	JMA 7	1987-88	1988	8	198808	43,206	62,175	0	105,381
JMA 7_198809	JMA 7	1987-88	1988	9	198809	513,573	739,045	0	1,252,618
JMA 7_198810	JMA 7	1988-89	1988	10	198810	155,147	223,261	0	378,408
JMA 7_198811	JMA 7	1988-89	1988	11	198811	426,726	614,069	0	1,040,795
JMA 7_198812	JMA 7	1988-89	1988	12	198812	1,199,667	1,352,816	0	2,552,483
JMA 7_198901	JMA 7	1988-89	1989	1	198901	1,189,068	1,486,335	297,267	2,972,670
JMA 7_198902	JMA 7	1988-89	1989	2	198902	260,412	325,515	65,103	651,030
JMA 7_198903	JMA 7	1988-89	1989	3	198903	455,759	569,699	113,940	1,139,398
JMA 7_198904	JMA 7	1988-89	1989	4	198904	337,058	421,322	84,264	842,644
JMA 7_198905	JMA 7	1988-89	1989	5	198905	824,322	1,030,402	206,080	2,060,804
JMA 7_198906	JMA 7	1988-89	1989	6	198906	882,911	1,103,638	220,728	2,207,277
JMA 7_198907	JMA 7	1988-89	1989	7	198907	59,373	74,217	14,843	148,433

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_198908	JMA 7	1988-89	1989	8	198908	0	662,711	20,496	683,207
JMA 7_198909	JMA 7	1988-89	1989	9	198909	218,051	2,016,968	490,614	2,725,633
JMA 7_198910	JMA 7	1989-90	1989	10	198910	430,030	645,045	268,769	1,343,844
JMA 7_198911	JMA 7	1989-90	1989	11	198911	260,547	231,051	0	491,598
JMA 7_198912	JMA 7	1989-90	1989	12	198912	2,159,649	322,706	0	2,482,355
JMA 7_199001	JMA 7	1989-90	1990	1	199001	1,251,985	395,364	0	1,647,349
JMA 7_199002	JMA 7	1989-90	1990	2	199002	1,963,156	619,944	0	2,583,100
JMA 7_199003	JMA 7	1989-90	1990	3	199003	1,923,354	59,485	0	1,982,839
JMA 7_199004	JMA 7	1989-90	1990	4	199004	2,496,200	277,356	0	2,773,556
JMA 7_199005	JMA 7	1989-90	1990	5	199005	1,406,890	444,281	0	1,851,171
JMA 7_199006	JMA 7	1989-90	1990	6	199006	582,350	1,237,494	0	1,819,844
JMA 7_199007	JMA 7	1989-90	1990	7	199007	1,664,352	525,585	0	2,189,937
JMA 7_199008	JMA 7	1989-90	1990	8	199008	397,425	125,503	0	522,928
JMA 7_199009	JMA 7	1989-90	1990	9	199009	1,634,456	516,144	0	2,150,600
JMA 7_199010	JMA 7	1990-91	1990	10	199010	56,360	17,798	0	74,158
JMA 7_199011	JMA 7	1990-91	1990	11	199011	209,817	66,258	0	276,075
JMA 7_199012	JMA 7	1990-91	1990	12	199012	24,611	49,968	0	74,579
JMA 7_199101	JMA 7	1990-91	1991	1	199101	1,057,252	1,160,399	361,013	2,578,664
JMA 7_199102	JMA 7	1990-91	1991	2	199102	871,089	1,134,441	20,258	2,025,788
JMA 7_199103	JMA 7	1990-91	1991	3	199103	1,099,864	975,351	0	2,075,215
JMA 7_199104	JMA 7	1990-91	1991	4	199104	867,320	371,709	0	1,239,029
JMA 7_199105	JMA 7	1990-91	1991	5	199105	1,364,885	530,788	0	1,895,673
JMA 7_199106	JMA 7	1990-91	1991	6	199106	1,194,351	1,310,873	407,827	2,913,051
JMA 7_199107	JMA 7	1990-91	1991	7	199107	0	1,364,754	703,055	2,067,809
JMA 7_199108	JMA 7	1990-91	1991	8	199108	0	125,488	612,677	738,165
JMA 7_199109	JMA 7	1990-91	1991	9	199109	237,613	877,341	712,839	1,827,793
JMA 7_199110	JMA 7	1991-92	1991	10	199110	78,785	75,634	3,151	157,570
JMA 7_199111	JMA 7	1991-92	1991	11	199111	719,264	833,692	81,735	1,634,691
JMA 7_199112	JMA 7	1991-92	1991	12	199112	1,289,210	961,047	93,761	2,344,018
JMA 7_199201	JMA 7	1991-92	1992	1	199201	673,538	2,020,615	1,515,461	4,209,614
JMA 7_199202	JMA 7	1991-92	1992	2	199202	204,306	612,918	459,689	1,276,913
JMA 7_199203	JMA 7	1991-92	1992	3	199203	934,426	474,401	28,752	1,437,579
JMA 7_199204	JMA 7	1991-92	1992	4	199204	105,926	317,778	238,333	662,037
JMA 7_199205	JMA 7	1991-92	1992	5	199205	327,606	4,024,879	327,606	4,680,091
JMA 7_199206	JMA 7	1991-92	1992	6	199206	521,439	1,564,317	1,173,238	3,258,994
JMA 7_199207	JMA 7	1991-92	1992	7	199207	645,054	645,054	3,010,254	4,300,362
JMA 7_199208	JMA 7	1991-92	1992	8	199208	0	0	1,209,945	1,209,945
JMA 7_199209	JMA 7	1991-92	1992	9	199209	0	339,929	368,256	708,185
JMA 7_199210	JMA 7	1992-93	1992	10	199210	0	406,151	77,362	483,513
JMA 7_199211	JMA 7	1992-93	1992	11	199211	355,100	1,065,301	798,976	2,219,377
JMA 7_199212	JMA 7	1992-93	1992	12	199212	310,822	946,593	155,411	1,412,826
JMA 7_199301	JMA 7	1992-93	1993	1	199301	775,562	1,892,370	434,314	3,102,246
JMA 7_199302	JMA 7	1992-93	1993	2	199302	1,057,010	1,726,449	739,907	3,523,366
JMA 7_199303	JMA 7	1992-93	1993	3	199303	985,020	2,357,013	175,897	3,517,930
JMA 7_199304	JMA 7	1992-93	1993	4	199304	443,451	812,994	591,268	1,847,713
JMA 7_199305	JMA 7	1992-93	1993	5	199305	471,115	863,711	628,153	1,962,979
JMA 7_199306	JMA 7	1992-93	1993	6	199306	0	0	3,151,668	3,151,668
JMA 7_199307	JMA 7	1992-93	1993	7	199307	451,685	828,089	602,246	1,882,020
JMA 7_199308	JMA 7	1992-93	1993	8	199308	0	0	627,371	627,371
JMA 7_199309	JMA 7	1992-93	1993	9	199309	258,982	474,800	345,309	1,079,091
JMA 7_199310	JMA 7	1993-94	1993	10	199310	628,754	171,478	152,425	952,657
JMA 7_199311	JMA 7	1993-94	1993	11	199311	69,148	122,931	0	192,079
JMA 7_199312	JMA 7	1993-94	1993	12	199312	461,145	1,161,403	85,397	1,707,945
JMA 7_199401	JMA 7	1993-94	1994	1	199401	579,863	802,887	104,078	1,486,828
JMA 7_199402	JMA 7	1993-94	1994	2	199402	1,741,804	1,327,089	1,078,260	4,147,153
JMA 7_199403	JMA 7	1993-94	1994	3	199403	117,938	183,459	353,814	655,211
JMA 7_199404	JMA 7	1993-94	1994	4	199404	137,170	213,376	411,510	762,056
JMA 7_199405	JMA 7	1993-94	1994	5	199405	305,890	234,752	170,729	711,371
JMA 7_199406	JMA 7	1993-94	1994	6	199406	583,116	938,055	1,014,114	2,535,285
JMA 7_199407	JMA 7	1993-94	1994	7	199407	0	334,364	3,845,191	4,179,555

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_199408	JMA 7	1993-94	1994	8	199408	0	0	2,980,589	2,980,589
JMA 7_199409	JMA 7	1993-94	1994	9	199409	0	1,343,075	723,194	2,066,269
JMA 7_199410	JMA 7	1994-95	1994	10	199410	14,741	22,930	44,222	81,893
JMA 7_199411	JMA 7	1994-95	1994	11	199411	56,437	87,790	169,310	313,537
JMA 7_199412	JMA 7	1994-95	1994	12	199412	263,062	255,091	279,006	797,159
JMA 7_199501	JMA 7	1994-95	1995	1	199501	815,206	537,689	381,586	1,734,481
JMA 7_199502	JMA 7	1994-95	1995	2	199502	145,676	172,162	1,006,485	1,324,323
JMA 7_199503	JMA 7	1994-95	1995	3	199503	191,476	264,419	455,896	911,791
JMA 7_199504	JMA 7	1994-95	1995	4	199504	68,937	81,471	476,292	626,700
JMA 7_199505	JMA 7	1994-95	1995	5	199505	138,409	163,575	956,283	1,258,267
JMA 7_199506	JMA 7	1994-95	1995	6	199506	218,116	257,774	1,506,987	1,982,877
JMA 7_199507	JMA 7	1994-95	1995	7	199507	0	411,720	6,450,276	6,861,996
JMA 7_199508	JMA 7	1994-95	1995	8	199508	164,801	194,765	1,138,627	1,498,193
JMA 7_199509	JMA 7	1994-95	1995	9	199509	167,396	197,832	1,156,556	1,521,784
JMA 7_199510	JMA 7	1995-96	1995	10	199510	14,146	16,718	97,738	128,602
JMA 7_199511	JMA 7	1995-96	1995	11	199511	17,165	20,285	118,592	156,042
JMA 7_199512	JMA 7	1995-96	1995	12	199512	28,658	33,869	198,001	260,528
JMA 7_199601	JMA 7	1995-96	1996	1	199601	222,035	397,326	549,245	1,168,606
JMA 7_199602	JMA 7	1995-96	1996	2	199602	561,911	561,911	316,975	1,440,797
JMA 7_199603	JMA 7	1995-96	1996	3	199603	206,703	503,276	188,728	898,707
JMA 7_199604	JMA 7	1995-96	1996	4	199604	73,226	131,035	181,137	385,398
JMA 7_199605	JMA 7	1995-96	1996	5	199605	122,705	219,577	303,534	645,816
JMA 7_199606	JMA 7	1995-96	1996	6	199606	0	0	156,017	156,017
JMA 7_199607	JMA 7	1995-96	1996	7	199607	791,477	1,416,327	1,957,863	4,165,667
JMA 7_199608	JMA 7	1995-96	1996	8	199608	0	106,500	2,023,500	2,130,000
JMA 7_199609	JMA 7	1995-96	1996	9	199609	139,426	249,499	344,895	733,820
JMA 7_199610	JMA 7	1996-97	1996	10	199610	84,082	150,463	207,993	442,538
JMA 7_199611	JMA 7	1996-97	1996	11	199611	75,514	135,130	186,797	397,441
JMA 7_199612	JMA 7	1996-97	1996	12	199612	360,448	881,095	93,450	1,334,993
JMA 7_199701	JMA 7	1996-97	1997	1	199701	23,036	39,974	4,743	67,753
JMA 7_199702	JMA 7	1996-97	1997	2	199702	481,030	1,151,035	85,898	1,717,963
JMA 7_199703	JMA 7	1996-97	1997	3	199703	158,689	350,438	152,077	661,204
JMA 7_199704	JMA 7	1996-97	1997	4	199704	12,030	24,862	43,309	80,201
JMA 7_199705	JMA 7	1996-97	1997	5	199705	64,956	134,242	233,842	433,040
JMA 7_199706	JMA 7	1996-97	1997	6	199706	0	636,009	564,008	1,200,017
JMA 7_199707	JMA 7	1996-97	1997	7	199707	0	210,735	2,130,764	2,341,499
JMA 7_199708	JMA 7	1996-97	1997	8	199708	0	110,528	994,749	1,105,277
JMA 7_199709	JMA 7	1996-97	1997	9	199709	0	181,926	2,092,149	2,274,075
JMA 7_199710	JMA 7	1997-98	1997	10	199710	10,549	21,801	37,976	70,326
JMA 7_199711	JMA 7	1997-98	1997	11	199711	154,366	183,570	79,269	417,205
JMA 7_199712	JMA 7	1997-98	1997	12	199712	883,396	671,381	212,015	1,766,792
JMA 7_199801	JMA 7	1997-98	1998	1	199801	279,292	567,894	83,788	930,974
JMA 7_199802	JMA 7	1997-98	1998	2	199802	1,213,601	1,434,255	110,327	2,758,183
JMA 7_199803	JMA 7	1997-98	1998	3	199803	15,150	20,051	9,357	44,558
JMA 7_199804	JMA 7	1997-98	1998	4	199804	700,216	926,756	432,486	2,059,458
JMA 7_199805	JMA 7	1997-98	1998	5	199805	360,846	477,591	222,876	1,061,313
JMA 7_199806	JMA 7	1997-98	1998	6	199806	444,262	587,993	274,397	1,306,652
JMA 7_199807	JMA 7	1997-98	1998	7	199807	0	162,218	851,644	1,013,862
JMA 7_199808	JMA 7	1997-98	1998	8	199808	648,632	858,483	400,626	1,907,741
JMA 7_199809	JMA 7	1997-98	1998	9	199809	324,679	429,723	200,537	954,939
JMA 7_199810	JMA 7	1998-99	1998	10	199810	69,840	92,435	43,137	205,412
JMA 7_199811	JMA 7	1998-99	1998	11	199811	27,675	36,629	17,093	81,397
JMA 7_199812	JMA 7	1998-99	1998	12	199812	452,963	486,107	165,718	1,104,788
JMA 7_199901	JMA 7	1998-99	1999	1	199901	589,845	661,777	187,024	1,438,646
JMA 7_199902	JMA 7	1998-99	1999	2	199902	6,504	41,388	11,234	59,126
JMA 7_199903	JMA 7	1998-99	1999	3	199903	8,050	51,225	13,904	73,179
JMA 7_199904	JMA 7	1998-99	1999	4	199904	211,252	1,413,764	0	1,625,016
JMA 7_199905	JMA 7	1998-99	1999	5	199905	118,731	755,563	205,081	1,079,375
JMA 7_199906	JMA 7	1998-99	1999	6	199906	0	3,046,672	62,177	3,108,849
JMA 7_199907	JMA 7	1998-99	1999	7	199907	0	1,860,234	494,493	2,354,727

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_199908	JMA 7	1998-99	1999	8	199908	0	0	1,047,954	1,047,954
JMA 7_199909	JMA 7	1998-99	1999	9	199909	460,525	572,168	362,838	1,395,531
JMA 7_199910	JMA 7	1999-00	1999	10	199910	186,513	1,818,499	326,397	2,331,409
JMA 7_199911	JMA 7	1999-00	1999	11	199911	12,679	22,905	5,317	40,901
JMA 7_199912	JMA 7	1999-00	1999	12	199912	27,022	171,959	46,674	245,655
JMA 7_200001	JMA 7	1999-00	2000	1	200001	266,642	984,525	799,927	2,051,094
JMA 7_200002	JMA 7	1999-00	2000	2	200002	5,494	20,286	16,483	42,263
JMA 7_200003	JMA 7	1999-00	2000	3	200003	6,307	23,288	18,922	48,517
JMA 7_200004	JMA 7	1999-00	2000	4	200004	22,758	84,028	68,273	175,059
JMA 7_200005	JMA 7	1999-00	2000	5	200005	25,481	94,082	76,442	196,005
JMA 7_200006	JMA 7	1999-00	2000	6	200006	0	52,708	0	52,708
JMA 7_200007	JMA 7	1999-00	2000	7	200007	0	636,063	1,719,727	2,355,790
JMA 7_200008	JMA 7	1999-00	2000	8	200008	0	77,801	71,816	149,617
JMA 7_200009	JMA 7	1999-00	2000	9	200009	25,998	95,992	77,994	199,984
JMA 7_200010	JMA 7	2000-01	2000	10	200010	54,158	568,664	54,158	676,980
JMA 7_200011	JMA 7	2000-01	2000	11	200011	11,427	101,414	29,996	142,837
JMA 7_200012	JMA 7	2000-01	2000	12	200012	813,861	1,875,420	849,247	3,538,528
JMA 7_200101	JMA 7	2000-01	2001	1	200101	491,336	3,521,238	81,889	4,094,463
JMA 7_200102	JMA 7	2000-01	2001	2	200102	4,115	29,494	686	34,295
JMA 7_200103	JMA 7	2000-01	2001	3	200103	12,182	87,305	2,030	101,517
JMA 7_200104	JMA 7	2000-01	2001	4	200104	6,783	13,778	636	21,197
JMA 7_200105	JMA 7	2000-01	2001	5	200105	56,952	408,155	9,492	474,599
JMA 7_200106	JMA 7	2000-01	2001	6	200106	334,805	2,399,435	55,801	2,790,041
JMA 7_200107	JMA 7	2000-01	2001	7	200107	0	3,225,956	0	3,225,956
JMA 7_200108	JMA 7	2000-01	2001	8	200108	3,408	337,392	0	340,800
JMA 7_200109	JMA 7	2000-01	2001	9	200109	0	175,004	86,196	261,200
JMA 7_200110	JMA 7	2001-02	2001	10	200110	675,488	1,048,784	53,328	1,777,600
JMA 7_200111	JMA 7	2001-02	2001	11	200111	78,322	561,305	13,054	652,681
JMA 7_200112	JMA 7	2001-02	2001	12	200112	574,076	4,114,209	95,679	4,783,964
JMA 7_200201	JMA 7	2001-02	2002	1	200201	476,584	5,719,011	612,751	6,808,346
JMA 7_200202	JMA 7	2001-02	2002	2	200202	1,652	19,828	2,124	23,604
JMA 7_200203	JMA 7	2001-02	2002	3	200203	2,265	27,180	2,912	32,357
JMA 7_200204	JMA 7	2001-02	2002	4	200204	34,580	414,957	44,460	493,997
JMA 7_200205	JMA 7	2001-02	2002	5	200205	39,678	476,138	51,015	566,831
JMA 7_200206	JMA 7	2001-02	2002	6	200206	137,460	1,649,517	176,734	1,963,711
JMA 7_200207	JMA 7	2001-02	2002	7	200207	0	3,889,053	0	3,889,053
JMA 7_200208	JMA 7	2001-02	2002	8	200208	22,928	121,694	31,746	176,368
JMA 7_200209	JMA 7	2001-02	2002	9	200209	105,316	947,840	117,017	1,170,173
JMA 7_200210	JMA 7	2002-03	2002	10	200210	287,171	1,300,716	101,355	1,689,242
JMA 7_200211	JMA 7	2002-03	2002	11	200211	219,993	1,044,967	568,315	1,833,275
JMA 7_200212	JMA 7	2002-03	2002	12	200212	215,964	2,591,574	277,669	3,085,207
JMA 7_200301	JMA 7	2002-03	2003	1	200301	3,061,465	2,449,172	55,663	5,566,300
JMA 7_200302	JMA 7	2002-03	2003	2	200302	617,320	493,856	11,224	1,122,400
JMA 7_200303	JMA 7	2002-03	2003	3	200303	28,079	22,463	511	51,053
JMA 7_200304	JMA 7	2002-03	2003	4	200304	350,974	215,113	0	566,087
JMA 7_200305	JMA 7	2002-03	2003	5	200305	3,260,140	1,029,518	0	4,289,658
JMA 7_200306	JMA 7	2002-03	2003	6	200306	54,330	43,464	988	98,782
JMA 7_200307	JMA 7	2002-03	2003	7	200307	3,804,454	3,043,563	69,172	6,917,189
JMA 7_200308	JMA 7	2002-03	2003	8	200308	632,475	0	0	632,475
JMA 7_200309	JMA 7	2002-03	2003	9	200309	128,614	102,891	2,338	233,843
JMA 7_200310	JMA 7	2003-04	2003	10	200310	917,684	1,435,353	0	2,353,037
JMA 7_200311	JMA 7	2003-04	2003	11	200311	2,800,509	2,240,408	50,918	5,091,835
JMA 7_200312	JMA 7	2003-04	2003	12	200312	506,919	1,875,599	152,076	2,534,594
JMA 7_200401	JMA 7	2003-04	2004	1	200401	1,646,806	6,093,182	494,042	8,234,030
JMA 7_200402	JMA 7	2003-04	2004	2	200402	8,881	14,970	1,522	25,373
JMA 7_200403	JMA 7	2003-04	2004	3	200403	11,116	18,739	1,906	31,761
JMA 7_200404	JMA 7	2003-04	2004	4	200404	8,616	14,524	1,477	24,617
JMA 7_200405	JMA 7	2003-04	2004	5	200405	159,322	268,571	27,312	455,205
JMA 7_200406	JMA 7	2003-04	2004	6	200406	618,264	1,042,216	105,988	1,766,468
JMA 7_200407	JMA 7	2003-04	2004	7	200407	1,972,114	3,324,420	338,077	5,634,611

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_200408	JMA 7	2003-04	2004	8	200408	68,959	635,953	61,297	766,209
JMA 7_200409	JMA 7	2003-04	2004	9	200409	571,058	1,358,725	39,383	1,969,166
JMA 7_200410	JMA 7	2004-05	2004	10	200410	2,104,143	3,546,983	360,710	6,011,836
JMA 7_200411	JMA 7	2004-05	2004	11	200411	1,641,733	1,680,821	586,333	3,908,887
JMA 7_200412	JMA 7	2004-05	2004	12	200412	3,133,190	1,819,272	101,071	5,053,533
JMA 7_200501	JMA 7	2004-05	2005	1	200501	1,225,848	6,537,856	408,616	8,172,320
JMA 7_200502	JMA 7	2004-05	2005	2	200502	141,894	756,766	47,298	945,958
JMA 7_200503	JMA 7	2004-05	2005	3	200503	3,032	16,170	1,011	20,213
JMA 7_200504	JMA 7	2004-05	2005	4	200504	173,086	101,653	0	274,739
JMA 7_200505	JMA 7	2004-05	2005	5	200505	590,594	147,649	0	738,243
JMA 7_200506	JMA 7	2004-05	2005	6	200506	712,525	455,548	0	1,168,073
JMA 7_200507	JMA 7	2004-05	2005	7	200507	0	6,855,568	212,028	7,067,596
JMA 7_200508	JMA 7	2004-05	2005	8	200508	0	2,865,456	88,622	2,954,078
JMA 7_200509	JMA 7	2004-05	2005	9	200509	44,051	114,916	32,559	191,526
JMA 7_200510	JMA 7	2005-06	2005	10	200510	576,361	3,073,925	192,120	3,842,406
JMA 7_200511	JMA 7	2005-06	2005	11	200511	419,245	2,235,974	139,748	2,794,967
JMA 7_200512	JMA 7	2005-06	2005	12	200512	1,349,449	4,293,701	490,709	6,133,859
JMA 7_200601	JMA 7	2005-06	2006	1	200601	1,137,838	3,276,972	136,541	4,551,351
JMA 7_200602	JMA 7	2005-06	2006	2	200602	26,798	77,177	3,216	107,191
JMA 7_200603	JMA 7	2005-06	2006	3	200603	3,435	9,893	412	13,740
JMA 7_200604	JMA 7	2005-06	2006	4	200604	303,020	872,698	36,362	1,212,080
JMA 7_200605	JMA 7	2005-06	2006	5	200605	378,371	1,089,708	45,404	1,513,483
JMA 7_200606	JMA 7	2005-06	2006	6	200606	628,471	1,256,942	19,045	1,904,458
JMA 7_200607	JMA 7	2005-06	2006	7	200607	831,033	3,693,481	92,337	4,616,851
JMA 7_200608	JMA 7	2005-06	2006	8	200608	281,606	440,461	0	722,067
JMA 7_200609	JMA 7	2005-06	2006	9	200609	92,388	266,076	11,087	369,551
JMA 7_200610	JMA 7	2006-07	2006	10	200610	695,587	1,458,488	89,753	2,243,828
JMA 7_200611	JMA 7	2006-07	2006	11	200611	896,621	1,429,747	96,932	2,423,300
JMA 7_200612	JMA 7	2006-07	2006	12	200612	725,704	3,372,390	170,754	4,268,848
JMA 7_200701	JMA 7	2006-07	2007	1	200701	907,210	7,892,726	272,163	9,072,099
JMA 7_200702	JMA 7	2006-07	2007	2	200702	130,267	396,466	39,647	566,380
JMA 7_200703	JMA 7	2006-07	2007	3	200703	2,605	7,930	793	11,328
JMA 7_200704	JMA 7	2006-07	2007	4	200704	1,318,842	1,215,404	51,719	2,585,965
JMA 7_200705	JMA 7	2006-07	2007	5	200705	510,965	1,555,112	155,511	2,221,588
JMA 7_200706	JMA 7	2006-07	2007	6	200706	4,289	21,714	804	26,807
JMA 7_200707	JMA 7	2006-07	2007	7	200707	305,354	5,068,879	732,850	6,107,083
JMA 7_200708	JMA 7	2006-07	2007	8	200708	267,936	1,031,554	40,190	1,339,680
JMA 7_200709	JMA 7	2006-07	2007	9	200709	550,884	621,209	0	1,172,093
JMA 7_200710	JMA 7	2007-08	2007	10	200710	1,675,807	2,191,440	429,694	4,296,941
JMA 7_200711	JMA 7	2007-08	2007	11	200711	28,937	468,783	81,024	578,744
JMA 7_200712	JMA 7	2007-08	2007	12	200712	2,559,021	4,575,219	620,369	7,754,609
JMA 7_200801	JMA 7	2007-08	2008	1	200801	1,834,570	6,329,267	1,009,014	9,172,851
JMA 7_200802	JMA 7	2007-08	2008	2	200802	121,725	370,467	37,047	529,239
JMA 7_200803	JMA 7	2007-08	2008	3	200803	2,146	6,532	653	9,331
JMA 7_200804	JMA 7	2007-08	2008	4	200804	439,332	1,337,097	133,710	1,910,139
JMA 7_200805	JMA 7	2007-08	2008	5	200805	1,693	5,151	515	7,359
JMA 7_200806	JMA 7	2007-08	2008	6	200806	213,859	1,042,563	80,197	1,336,619
JMA 7_200807	JMA 7	2007-08	2008	7	200807	1,567,908	4,181,087	58,071	5,807,066
JMA 7_200808	JMA 7	2007-08	2008	8	200808	483,760	505,749	109,945	1,099,454
JMA 7_200809	JMA 7	2007-08	2008	9	200809	389,163	1,089,656	77,833	1,556,652
JMA 7_200810	JMA 7	2008-09	2008	10	200810	149,867	359,681	89,920	599,468
JMA 7_200811	JMA 7	2008-09	2008	11	200811	1,123,255	3,135,753	421,221	4,680,229
JMA 7_200812	JMA 7	2008-09	2008	12	200812	1,018,367	3,332,838	277,736	4,628,941
JMA 7_200901	JMA 7	2008-09	2009	1	200901	1,560,000	6,846,667	260,000	8,666,667
JMA 7_200902	JMA 7	2008-09	2009	2	200902	442,172	1,173,457	85,033	1,700,662
JMA 7_200903	JMA 7	2008-09	2009	3	200903	22,467	59,625	4,321	86,413
JMA 7_200904	JMA 7	2008-09	2009	4	200904	3,090	8,200	594	11,884
JMA 7_200905	JMA 7	2008-09	2009	5	200905	65,854	404,529	0	470,383
JMA 7_200906	JMA 7	2008-09	2009	6	200906	199,836	690,341	18,167	908,344
JMA 7_200907	JMA 7	2008-09	2009	7	200907	1,322,451	3,509,581	254,317	5,086,349

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_200908	JMA 7	2008-09	2009	8	200908	10,064	905,756	90,576	1,006,396
JMA 7_200909	JMA 7	2008-09	2009	9	200909	255,388	677,761	49,113	982,262
JMA 7_200910	JMA 7	2009-10	2009	10	200910	1,555,223	2,332,835	432,007	4,320,065
JMA 7_200911	JMA 7	2009-10	2009	11	200911	487,674	291,031	7,866	786,571
JMA 7_200912	JMA 7	2009-10	2009	12	200912	2,081,383	4,229,907	402,848	6,714,138
JMA 7_201001	JMA 7	2009-10	2010	1	201001	1,161,540	5,589,910	508,174	7,259,624
JMA 7_201002	JMA 7	2009-10	2010	2	201002	422,587	1,760,778	164,339	2,347,704
JMA 7_201003	JMA 7	2009-10	2010	3	201003	208,334	265,152	0	473,486
JMA 7_201004	JMA 7	2009-10	2010	4	201004	370,371	1,543,212	144,033	2,057,616
JMA 7_201005	JMA 7	2009-10	2010	5	201005	154,061	641,919	59,912	855,892
JMA 7_201006	JMA 7	2009-10	2010	6	201006	646,021	2,691,756	251,231	3,589,008
JMA 7_201007	JMA 7	2009-10	2010	7	201007	445,895	1,857,898	173,404	2,477,197
JMA 7_201008	JMA 7	2009-10	2010	8	201008	23,735	98,895	9,230	131,860
JMA 7_201009	JMA 7	2009-10	2010	9	201009	25,044	104,349	9,739	139,132
JMA 7_201010	JMA 7	2010-11	2010	10	201010	318,131	1,325,547	123,718	1,767,396
JMA 7_201011	JMA 7	2010-11	2010	11	201011	4,233	17,636	1,646	23,515
JMA 7_201012	JMA 7	2010-11	2010	12	201012	1,295,579	5,398,247	503,836	7,197,662

Appendix C

Comparative raised monthly catches (kg) of *Trachurus novaezelandiae* (JMN), *T. declivis* (JMD) and *T. murphyi* (JMM) in New Zealand fisheries management area JMA 7, from October 1985 to December 2010, using the Bayesian fishing-year species proportions estimates derived by Rohan et al. (2006) and Smith (2011) (see text for details).

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_198510	JMA 7	1985-86	1985	10	198510	491,003	706,566	0	1,197,569
JMA 7_198511	JMA 7	1985-86	1985	11	198511	706,657	1,016,896	0	1,723,553
JMA 7_198512	JMA 7	1985-86	1985	12	198512	1,377,332	1,982,015	0	3,359,347
JMA 7_198601	JMA 7	1985-86	1986	1	198601	798,888	1,149,619	0	1,948,507
JMA 7_198602	JMA 7	1985-86	1986	2	198602	42,991	61,864	0	104,855
JMA 7_198603	JMA 7	1985-86	1986	3	198603	53,388	76,827	0	130,215
JMA 7_198604	JMA 7	1985-86	1986	4	198604	20,648	29,713	0	50,361
JMA 7_198605	JMA 7	1985-86	1986	5	198605	274,635	395,206	0	669,841
JMA 7_198606	JMA 7	1985-86	1986	6	198606	263,376	379,004	0	642,380
JMA 7_198607	JMA 7	1985-86	1986	7	198607	39,314	56,575	0	95,889
JMA 7_198608	JMA 7	1985-86	1986	8	198608	61,408	88,368	0	149,776
JMA 7_198609	JMA 7	1985-86	1986	9	198609	410,787	591,133	0	1,001,920
JMA 7_198610	JMA 7	1986-87	1986	10	198610	105,092	118,509	0	223,601
JMA 7_198611	JMA 7	1986-87	1986	11	198611	806,326	909,262	0	1,715,588
JMA 7_198612	JMA 7	1986-87	1986	12	198612	2,756,928	3,108,877	0	5,865,805
JMA 7_198701	JMA 7	1986-87	1987	1	198701	2,847,469	3,210,975	0	6,058,444
JMA 7_198702	JMA 7	1986-87	1987	2	198702	51,766	58,375	0	110,141
JMA 7_198703	JMA 7	1986-87	1987	3	198703	219,748	247,801	0	467,549
JMA 7_198704	JMA 7	1986-87	1987	4	198704	661,737	746,215	0	1,407,952
JMA 7_198705	JMA 7	1986-87	1987	5	198705	1,096,001	1,235,915	0	2,331,916
JMA 7_198706	JMA 7	1986-87	1987	6	198706	186,567	210,384	0	396,951
JMA 7_198707	JMA 7	1986-87	1987	7	198707	106,000	119,531	0	225,531
JMA 7_198708	JMA 7	1986-87	1987	8	198708	25,662	28,939	0	54,601
JMA 7_198709	JMA 7	1986-87	1987	9	198709	449,752	507,167	0	956,919
JMA 7_198710	JMA 7	1987-88	1987	10	198710	193,684	431,103	0	624,787
JMA 7_198711	JMA 7	1987-88	1987	11	198711	157,996	351,667	0	509,663
JMA 7_198712	JMA 7	1987-88	1987	12	198712	522,573	1,163,146	0	1,685,719
JMA 7_198801	JMA 7	1987-88	1988	1	198801	908,802	2,022,817	0	2,931,619
JMA 7_198802	JMA 7	1987-88	1988	2	198802	550,380	1,225,040	0	1,775,420
JMA 7_198803	JMA 7	1987-88	1988	3	198803	246,343	548,313	0	794,656
JMA 7_198804	JMA 7	1987-88	1988	4	198804	874,521	1,946,515	0	2,821,036
JMA 7_198805	JMA 7	1987-88	1988	5	198805	629,659	1,401,500	0	2,031,159
JMA 7_198806	JMA 7	1987-88	1988	6	198806	893,732	1,989,275	0	2,883,007
JMA 7_198807	JMA 7	1987-88	1988	7	198807	127,700	284,236	0	411,936
JMA 7_198808	JMA 7	1987-88	1988	8	198808	32,668	72,713	0	105,381
JMA 7_198809	JMA 7	1987-88	1988	9	198809	388,312	864,306	0	1,252,618
JMA 7_198810	JMA 7	1988-89	1988	10	198810	60,545	314,079	3,784	378,408
JMA 7_198811	JMA 7	1988-89	1988	11	198811	166,527	863,860	10,408	1,040,795
JMA 7_198812	JMA 7	1988-89	1988	12	198812	408,397	2,118,560	25,525	2,552,482
JMA 7_198901	JMA 7	1988-89	1989	1	198901	475,627	2,467,315	29,727	2,972,669
JMA 7_198902	JMA 7	1988-89	1989	2	198902	104,165	540,354	6,510	651,029
JMA 7_198903	JMA 7	1988-89	1989	3	198903	182,304	945,700	11,394	1,139,398
JMA 7_198904	JMA 7	1988-89	1989	4	198904	134,823	699,394	8,426	842,643
JMA 7_198905	JMA 7	1988-89	1989	5	198905	329,729	1,710,468	20,608	2,060,805
JMA 7_198906	JMA 7	1988-89	1989	6	198906	353,164	1,832,040	22,073	2,207,277
JMA 7_198907	JMA 7	1988-89	1989	7	198907	23,749	123,200	1,484	148,433
JMA 7_198908	JMA 7	1988-89	1989	8	198908	109,313	567,062	6,832	683,207
JMA 7_198909	JMA 7	1988-89	1989	9	198909	436,101	2,262,275	27,256	2,725,632
JMA 7_198910	JMA 7	1989-90	1989	10	198910	524,099	819,745	0	1,343,844
JMA 7_198911	JMA 7	1989-90	1989	11	198911	191,724	299,875	0	491,599
JMA 7_198912	JMA 7	1989-90	1989	12	198912	968,119	1,514,237	0	2,482,356

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_199001	JMA 7	1989-90	1990	1	199001	642,466	1,004,882	0	1,647,348
JMA 7_199002	JMA 7	1989-90	1990	2	199002	1,007,409	1,575,691	0	2,583,100
JMA 7_199003	JMA 7	1989-90	1990	3	199003	773,307	1,209,532	0	1,982,839
JMA 7_199004	JMA 7	1989-90	1990	4	199004	1,081,686	1,691,869	0	2,773,555
JMA 7_199005	JMA 7	1989-90	1990	5	199005	721,957	1,129,214	0	1,851,171
JMA 7_199006	JMA 7	1989-90	1990	6	199006	709,739	1,110,105	0	1,819,844
JMA 7_199007	JMA 7	1989-90	1990	7	199007	854,075	1,335,861	0	2,189,936
JMA 7_199008	JMA 7	1989-90	1990	8	199008	203,942	318,986	0	522,928
JMA 7_199009	JMA 7	1989-90	1990	9	199009	838,734	1,311,866	0	2,150,600
JMA 7_199010	JMA 7	1990-91	1990	10	199010	31,146	40,045	2,966	74,157
JMA 7_199011	JMA 7	1990-91	1990	11	199011	115,952	149,081	11,043	276,076
JMA 7_199012	JMA 7	1990-91	1990	12	199012	31,323	40,273	2,983	74,579
JMA 7_199101	JMA 7	1990-91	1991	1	199101	1,083,039	1,392,479	103,147	2,578,665
JMA 7_199102	JMA 7	1990-91	1991	2	199102	850,831	1,093,926	81,032	2,025,789
JMA 7_199103	JMA 7	1990-91	1991	3	199103	871,590	1,120,616	83,009	2,075,215
JMA 7_199104	JMA 7	1990-91	1991	4	199104	520,392	669,076	49,561	1,239,029
JMA 7_199105	JMA 7	1990-91	1991	5	199105	796,183	1,023,663	75,827	1,895,673
JMA 7_199106	JMA 7	1990-91	1991	6	199106	1,223,482	1,573,048	116,522	2,913,052
JMA 7_199107	JMA 7	1990-91	1991	7	199107	868,480	1,116,617	82,712	2,067,809
JMA 7_199108	JMA 7	1990-91	1991	8	199108	310,029	398,609	29,527	738,165
JMA 7_199109	JMA 7	1990-91	1991	9	199109	767,673	987,008	73,112	1,827,793
JMA 7_199110	JMA 7	1991-92	1991	10	199110	53,574	75,634	28,363	157,571
JMA 7_199111	JMA 7	1991-92	1991	11	199111	555,795	784,651	294,244	1,634,690
JMA 7_199112	JMA 7	1991-92	1991	12	199112	796,966	1,125,129	421,923	2,344,018
JMA 7_199201	JMA 7	1991-92	1992	1	199201	1,431,269	2,020,615	757,731	4,209,615
JMA 7_199202	JMA 7	1991-92	1992	2	199202	434,150	612,918	229,844	1,276,912
JMA 7_199203	JMA 7	1991-92	1992	3	199203	488,777	690,038	258,764	1,437,579
JMA 7_199204	JMA 7	1991-92	1992	4	199204	225,093	317,778	119,167	662,038
JMA 7_199205	JMA 7	1991-92	1992	5	199205	1,591,231	2,246,444	842,417	4,680,092
JMA 7_199206	JMA 7	1991-92	1992	6	199206	1,108,058	1,564,317	586,619	3,258,994
JMA 7_199207	JMA 7	1991-92	1992	7	199207	1,462,123	2,064,174	774,065	4,300,362
JMA 7_199208	JMA 7	1991-92	1992	8	199208	411,381	580,774	217,790	1,209,945
JMA 7_199209	JMA 7	1991-92	1992	9	199209	240,783	339,929	127,473	708,185
JMA 7_199210	JMA 7	1992-93	1992	10	199210	169,230	154,724	159,559	483,513
JMA 7_199211	JMA 7	1992-93	1992	11	199211	776,782	710,201	732,395	2,219,378
JMA 7_199212	JMA 7	1992-93	1992	12	199212	494,489	452,104	466,232	1,412,825
JMA 7_199301	JMA 7	1992-93	1993	1	199301	1,085,786	992,719	1,023,741	3,102,246
JMA 7_199302	JMA 7	1992-93	1993	2	199302	1,233,178	1,127,477	1,162,711	3,523,366
JMA 7_199303	JMA 7	1992-93	1993	3	199303	1,231,276	1,125,738	1,160,917	3,517,931
JMA 7_199304	JMA 7	1992-93	1993	4	199304	646,699	591,268	609,745	1,847,712
JMA 7_199305	JMA 7	1992-93	1993	5	199305	687,043	628,153	647,783	1,962,979
JMA 7_199306	JMA 7	1992-93	1993	6	199306	1,103,084	1,008,534	1,040,050	3,151,668
JMA 7_199307	JMA 7	1992-93	1993	7	199307	658,707	602,246	621,066	1,882,019
JMA 7_199308	JMA 7	1992-93	1993	8	199308	219,580	200,759	207,032	627,371
JMA 7_199309	JMA 7	1992-93	1993	9	199309	377,682	345,309	356,100	1,079,091
JMA 7_199310	JMA 7	1993-94	1993	10	199310	190,531	457,275	304,850	952,656
JMA 7_199311	JMA 7	1993-94	1993	11	199311	38,416	92,198	61,465	192,079
JMA 7_199312	JMA 7	1993-94	1993	12	199312	341,589	819,814	546,542	1,707,945
JMA 7_199401	JMA 7	1993-94	1994	1	199401	297,366	713,677	475,785	1,486,828
JMA 7_199402	JMA 7	1993-94	1994	2	199402	829,431	1,990,633	1,327,089	4,147,153
JMA 7_199403	JMA 7	1993-94	1994	3	199403	131,042	314,502	209,668	655,212
JMA 7_199404	JMA 7	1993-94	1994	4	199404	152,411	365,787	243,858	762,056
JMA 7_199405	JMA 7	1993-94	1994	5	199405	142,274	341,458	227,639	711,371
JMA 7_199406	JMA 7	1993-94	1994	6	199406	507,057	1,216,937	811,291	2,535,285
JMA 7_199407	JMA 7	1993-94	1994	7	199407	835,911	2,006,186	1,337,458	4,179,555
JMA 7_199408	JMA 7	1993-94	1994	8	199408	596,118	1,430,683	953,788	2,980,589
JMA 7_199409	JMA 7	1993-94	1994	9	199409	413,254	991,809	661,206	2,066,269
JMA 7_199410	JMA 7	1994-95	1994	10	199410	26,206	29,481	26,206	81,893
JMA 7_199411	JMA 7	1994-95	1994	11	199411	100,332	112,873	100,332	313,537
JMA 7_199412	JMA 7	1994-95	1994	12	199412	255,091	286,977	255,091	797,159

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_199501	JMA 7	1994-95	1995	1	199501	555,034	624,413	555,034	1,734,481
JMA 7_199502	JMA 7	1994-95	1995	2	199502	423,783	476,756	423,783	1,324,322
JMA 7_199503	JMA 7	1994-95	1995	3	199503	291,773	328,245	291,773	911,791
JMA 7_199504	JMA 7	1994-95	1995	4	199504	200,544	225,612	200,544	626,700
JMA 7_199505	JMA 7	1994-95	1995	5	199505	402,645	452,976	402,645	1,258,266
JMA 7_199506	JMA 7	1994-95	1995	6	199506	634,521	713,836	634,521	1,982,878
JMA 7_199507	JMA 7	1994-95	1995	7	199507	2,195,839	2,470,319	2,195,839	6,861,997
JMA 7_199508	JMA 7	1994-95	1995	8	199508	479,422	539,350	479,422	1,498,194
JMA 7_199509	JMA 7	1994-95	1995	9	199509	486,971	547,842	486,971	1,521,784
JMA 7_199510	JMA 7	1995-96	1995	10	199510	38,581	55,299	34,723	128,603
JMA 7_199511	JMA 7	1995-96	1995	11	199511	46,813	67,098	42,131	156,042
JMA 7_199512	JMA 7	1995-96	1995	12	199512	78,158	112,027	70,342	260,527
JMA 7_199601	JMA 7	1995-96	1996	1	199601	350,582	502,501	315,524	1,168,607
JMA 7_199602	JMA 7	1995-96	1996	2	199602	432,239	619,543	389,015	1,440,797
JMA 7_199603	JMA 7	1995-96	1996	3	199603	269,612	386,444	242,651	898,707
JMA 7_199604	JMA 7	1995-96	1996	4	199604	115,619	165,721	104,057	385,397
JMA 7_199605	JMA 7	1995-96	1996	5	199605	193,745	277,701	174,370	645,816
JMA 7_199606	JMA 7	1995-96	1996	6	199606	46,805	67,087	42,125	156,017
JMA 7_199607	JMA 7	1995-96	1996	7	199607	1,249,700	1,791,237	1,124,730	4,165,667
JMA 7_199608	JMA 7	1995-96	1996	8	199608	639,000	915,900	575,100	2,130,000
JMA 7_199609	JMA 7	1995-96	1996	9	199609	220,146	315,543	198,131	733,820
JMA 7_199610	JMA 7	1996-97	1996	10	199610	106,209	172,590	163,739	442,538
JMA 7_199611	JMA 7	1996-97	1996	11	199611	95,386	155,002	147,053	397,441
JMA 7_199612	JMA 7	1996-97	1996	12	199612	320,398	520,647	493,947	1,334,992
JMA 7_199701	JMA 7	1996-97	1997	1	199701	16,261	26,424	25,069	67,754
JMA 7_199702	JMA 7	1996-97	1997	2	199702	412,311	670,006	635,646	1,717,963
JMA 7_199703	JMA 7	1996-97	1997	3	199703	158,689	257,869	244,645	661,203
JMA 7_199704	JMA 7	1996-97	1997	4	199704	19,248	31,278	29,674	80,200
JMA 7_199705	JMA 7	1996-97	1997	5	199705	103,930	168,886	160,225	433,041
JMA 7_199706	JMA 7	1996-97	1997	6	199706	288,004	468,007	444,006	1,200,017
JMA 7_199707	JMA 7	1996-97	1997	7	199707	561,960	913,185	866,355	2,341,500
JMA 7_199708	JMA 7	1996-97	1997	8	199708	265,266	431,058	408,952	1,105,276
JMA 7_199709	JMA 7	1996-97	1997	9	199709	545,778	886,889	841,408	2,274,075
JMA 7_199710	JMA 7	1997-98	1997	10	199710	26,724	24,614	18,988	70,326
JMA 7_199711	JMA 7	1997-98	1997	11	199711	158,538	146,022	112,645	417,205
JMA 7_199712	JMA 7	1997-98	1997	12	199712	671,381	618,377	477,034	1,766,792
JMA 7_199801	JMA 7	1997-98	1998	1	199801	353,770	325,841	251,363	930,974
JMA 7_199802	JMA 7	1997-98	1998	2	199802	1,048,110	965,364	744,709	2,758,183
JMA 7_199803	JMA 7	1997-98	1998	3	199803	16,932	15,595	12,031	44,558
JMA 7_199804	JMA 7	1997-98	1998	4	199804	782,594	720,810	556,054	2,059,458
JMA 7_199805	JMA 7	1997-98	1998	5	199805	403,299	371,460	286,555	1,061,314
JMA 7_199806	JMA 7	1997-98	1998	6	199806	496,528	457,328	352,796	1,306,652
JMA 7_199807	JMA 7	1997-98	1998	7	199807	385,268	354,852	273,743	1,013,863
JMA 7_199808	JMA 7	1997-98	1998	8	199808	724,942	667,709	515,090	1,907,741
JMA 7_199809	JMA 7	1997-98	1998	9	199809	362,877	334,229	257,834	954,940
JMA 7_199810	JMA 7	1998-99	1998	10	199810	4,108	152,005	49,299	205,412
JMA 7_199811	JMA 7	1998-99	1998	11	199811	1,628	60,234	19,535	81,397
JMA 7_199812	JMA 7	1998-99	1998	12	199812	22,096	817,543	265,149	1,104,788
JMA 7_199901	JMA 7	1998-99	1999	1	199901	28,773	1,064,598	345,275	1,438,646
JMA 7_199902	JMA 7	1998-99	1999	2	199902	1,183	43,753	14,190	59,126
JMA 7_199903	JMA 7	1998-99	1999	3	199903	1,464	54,152	17,563	73,179
JMA 7_199904	JMA 7	1998-99	1999	4	199904	32,500	1,202,512	390,004	1,625,016
JMA 7_199905	JMA 7	1998-99	1999	5	199905	21,588	798,738	259,050	1,079,376
JMA 7_199906	JMA 7	1998-99	1999	6	199906	62,177	2,300,548	746,124	3,108,849
JMA 7_199907	JMA 7	1998-99	1999	7	199907	47,095	1,742,498	565,134	2,354,727
JMA 7_199908	JMA 7	1998-99	1999	8	199908	20,959	775,486	251,509	1,047,954
JMA 7_199909	JMA 7	1998-99	1999	9	199909	27,911	1,032,693	334,927	1,395,531
JMA 7_199910	JMA 7	1999-00	1999	10	199910	0	1,305,589	1,025,820	2,331,409
JMA 7_199911	JMA 7	1999-00	1999	11	199911	0	22,905	17,996	40,901
JMA 7_199912	JMA 7	1999-00	1999	12	199912	0	137,567	108,088	245,655

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_200001	JMA 7	1999-00	2000	1	200001	0	1,148,613	902,481	2,051,094
JMA 7_200002	JMA 7	1999-00	2000	2	200002	0	23,667	18,596	42,263
JMA 7_200003	JMA 7	1999-00	2000	3	200003	0	27,170	21,347	48,517
JMA 7_200004	JMA 7	1999-00	2000	4	200004	0	98,033	77,026	175,059
JMA 7_200005	JMA 7	1999-00	2000	5	200005	0	109,762	86,242	196,004
JMA 7_200006	JMA 7	1999-00	2000	6	200006	0	29,516	23,192	52,708
JMA 7_200007	JMA 7	1999-00	2000	7	200007	0	1,319,242	1,036,548	2,355,790
JMA 7_200008	JMA 7	1999-00	2000	8	200008	0	83,786	65,831	149,617
JMA 7_200009	JMA 7	1999-00	2000	9	200009	0	111,991	87,993	199,984
JMA 7_200010	JMA 7	2000-01	2000	10	200010	108,317	284,332	284,332	676,981
JMA 7_200011	JMA 7	2000-01	2000	11	200011	22,854	59,991	59,991	142,836
JMA 7_200012	JMA 7	2000-01	2000	12	200012	566,164	1,486,182	1,486,182	3,538,528
JMA 7_200101	JMA 7	2000-01	2001	1	200101	655,114	1,719,675	1,719,675	4,094,464
JMA 7_200102	JMA 7	2000-01	2001	2	200102	5,487	14,404	14,404	34,295
JMA 7_200103	JMA 7	2000-01	2001	3	200103	16,243	42,637	42,637	101,517
JMA 7_200104	JMA 7	2000-01	2001	4	200104	3,392	8,903	8,903	21,198
JMA 7_200105	JMA 7	2000-01	2001	5	200105	75,936	199,332	199,332	474,600
JMA 7_200106	JMA 7	2000-01	2001	6	200106	446,407	1,171,817	1,171,817	2,790,041
JMA 7_200107	JMA 7	2000-01	2001	7	200107	516,153	1,354,901	1,354,901	3,225,955
JMA 7_200108	JMA 7	2000-01	2001	8	200108	54,528	143,136	143,136	340,800
JMA 7_200109	JMA 7	2000-01	2001	9	200109	41,792	109,704	109,704	261,200
JMA 7_200110	JMA 7	2001-02	2001	10	200110	497,728	1,066,560	213,312	1,777,600
JMA 7_200111	JMA 7	2001-02	2001	11	200111	182,750	391,608	78,322	652,680
JMA 7_200112	JMA 7	2001-02	2001	12	200112	1,339,510	2,870,378	574,076	4,783,964
JMA 7_200201	JMA 7	2001-02	2002	1	200201	1,906,337	4,085,008	817,002	6,808,347
JMA 7_200202	JMA 7	2001-02	2002	2	200202	6,609	14,163	2,833	23,605
JMA 7_200203	JMA 7	2001-02	2002	3	200203	9,060	19,414	3,883	32,357
JMA 7_200204	JMA 7	2001-02	2002	4	200204	138,319	296,398	59,280	493,997
JMA 7_200205	JMA 7	2001-02	2002	5	200205	158,713	340,099	68,020	566,832
JMA 7_200206	JMA 7	2001-02	2002	6	200206	549,839	1,178,226	235,645	1,963,710
JMA 7_200207	JMA 7	2001-02	2002	7	200207	1,088,935	2,333,432	466,686	3,889,053
JMA 7_200208	JMA 7	2001-02	2002	8	200208	49,383	105,821	21,164	176,368
JMA 7_200209	JMA 7	2001-02	2002	9	200209	327,648	702,104	140,421	1,170,173
JMA 7_200210	JMA 7	2002-03	2002	10	200210	472,988	810,836	405,418	1,689,242
JMA 7_200211	JMA 7	2002-03	2002	11	200211	513,317	879,972	439,986	1,833,275
JMA 7_200212	JMA 7	2002-03	2002	12	200212	863,858	1,480,899	740,450	3,085,207
JMA 7_200301	JMA 7	2002-03	2003	1	200301	1,558,564	2,671,824	1,335,912	5,566,300
JMA 7_200302	JMA 7	2002-03	2003	2	200302	314,272	538,752	269,376	1,122,400
JMA 7_200303	JMA 7	2002-03	2003	3	200303	14,295	24,505	12,253	51,053
JMA 7_200304	JMA 7	2002-03	2003	4	200304	158,504	271,722	135,861	566,087
JMA 7_200305	JMA 7	2002-03	2003	5	200305	1,201,104	2,059,036	1,029,518	4,289,658
JMA 7_200306	JMA 7	2002-03	2003	6	200306	27,659	47,415	23,708	98,782
JMA 7_200307	JMA 7	2002-03	2003	7	200307	1,936,813	3,320,251	1,660,125	6,917,189
JMA 7_200308	JMA 7	2002-03	2003	8	200308	177,093	303,588	151,794	632,475
JMA 7_200309	JMA 7	2002-03	2003	9	200309	65,476	112,245	56,122	233,843
JMA 7_200310	JMA 7	2003-04	2003	10	200310	729,441	1,364,762	258,834	2,353,037
JMA 7_200311	JMA 7	2003-04	2003	11	200311	1,578,469	2,953,264	560,102	5,091,835
JMA 7_200312	JMA 7	2003-04	2003	12	200312	785,724	1,470,064	278,805	2,534,593
JMA 7_200401	JMA 7	2003-04	2004	1	200401	2,552,549	4,775,737	905,743	8,234,029
JMA 7_200402	JMA 7	2003-04	2004	2	200402	7,866	14,717	2,791	25,374
JMA 7_200403	JMA 7	2003-04	2004	3	200403	9,846	18,422	3,494	31,762
JMA 7_200404	JMA 7	2003-04	2004	4	200404	7,631	14,277	2,708	24,616
JMA 7_200405	JMA 7	2003-04	2004	5	200405	141,113	264,019	50,072	455,204
JMA 7_200406	JMA 7	2003-04	2004	6	200406	547,605	1,024,551	194,311	1,766,467
JMA 7_200407	JMA 7	2003-04	2004	7	200407	1,746,729	3,268,074	619,807	5,634,610
JMA 7_200408	JMA 7	2003-04	2004	8	200408	237,525	444,401	84,283	766,209
JMA 7_200409	JMA 7	2003-04	2004	9	200409	610,442	1,142,116	216,608	1,969,166
JMA 7_200410	JMA 7	2004-05	2004	10	200410	2,224,379	2,825,563	961,894	6,011,836
JMA 7_200411	JMA 7	2004-05	2004	11	200411	1,446,288	1,837,177	625,422	3,908,887
JMA 7_200412	JMA 7	2004-05	2004	12	200412	1,869,807	2,375,161	808,565	5,053,533

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_200501	JMA 7	2004-05	2005	1	200501	3,023,758	3,840,990	1,307,571	8,172,319
JMA 7_200502	JMA 7	2004-05	2005	2	200502	350,004	444,600	151,353	945,957
JMA 7_200503	JMA 7	2004-05	2005	3	200503	7,478	9,500	3,234	20,212
JMA 7_200504	JMA 7	2004-05	2005	4	200504	101,653	129,127	43,958	274,738
JMA 7_200505	JMA 7	2004-05	2005	5	200505	273,150	346,974	118,119	738,243
JMA 7_200506	JMA 7	2004-05	2005	6	200506	432,187	548,994	186,892	1,168,073
JMA 7_200507	JMA 7	2004-05	2005	7	200507	2,615,011	3,321,770	1,130,815	7,067,596
JMA 7_200508	JMA 7	2004-05	2005	8	200508	1,093,009	1,388,417	472,652	2,954,078
JMA 7_200509	JMA 7	2004-05	2005	9	200509	70,865	90,017	30,644	191,526
JMA 7_200510	JMA 7	2005-06	2005	10	200510	1,460,114	1,613,811	768,481	3,842,406
JMA 7_200511	JMA 7	2005-06	2005	11	200511	1,062,088	1,173,887	558,994	2,794,969
JMA 7_200512	JMA 7	2005-06	2005	12	200512	2,330,866	2,576,221	1,226,772	6,133,859
JMA 7_200601	JMA 7	2005-06	2006	1	200601	1,729,513	1,911,567	910,270	4,551,350
JMA 7_200602	JMA 7	2005-06	2006	2	200602	40,732	45,020	21,438	107,190
JMA 7_200603	JMA 7	2005-06	2006	3	200603	5,221	5,771	2,748	13,740
JMA 7_200604	JMA 7	2005-06	2006	4	200604	460,590	509,074	242,416	1,212,080
JMA 7_200605	JMA 7	2005-06	2006	5	200605	575,124	635,663	302,697	1,513,484
JMA 7_200606	JMA 7	2005-06	2006	6	200606	723,694	799,872	380,891	1,904,457
JMA 7_200607	JMA 7	2005-06	2006	7	200607	1,754,403	1,939,077	923,370	4,616,850
JMA 7_200608	JMA 7	2005-06	2006	8	200608	274,385	303,268	144,413	722,066
JMA 7_200609	JMA 7	2005-06	2006	9	200609	140,429	155,211	73,910	369,550
JMA 7_200610	JMA 7	2006-07	2006	10	200610	601,346	1,559,460	83,022	2,243,828
JMA 7_200611	JMA 7	2006-07	2006	11	200611	649,444	1,684,194	89,662	2,423,300
JMA 7_200612	JMA 7	2006-07	2006	12	200612	1,144,051	2,966,849	157,947	4,268,847
JMA 7_200701	JMA 7	2006-07	2007	1	200701	2,431,323	6,305,109	335,668	9,072,100
JMA 7_200702	JMA 7	2006-07	2007	2	200702	151,790	393,634	20,956	566,380
JMA 7_200703	JMA 7	2006-07	2007	3	200703	3,036	7,873	419	11,328
JMA 7_200704	JMA 7	2006-07	2007	4	200704	693,039	1,797,246	95,681	2,585,966
JMA 7_200705	JMA 7	2006-07	2007	5	200705	595,386	1,544,004	82,199	2,221,589
JMA 7_200706	JMA 7	2006-07	2007	6	200706	7,185	18,632	992	26,809
JMA 7_200707	JMA 7	2006-07	2007	7	200707	1,636,698	4,244,423	225,962	6,107,083
JMA 7_200708	JMA 7	2006-07	2007	8	200708	359,035	931,078	49,568	1,339,681
JMA 7_200709	JMA 7	2006-07	2007	9	200709	314,121	814,605	43,367	1,172,093
JMA 7_200710	JMA 7	2007-08	2007	10	200710	1,160,174	2,784,418	352,349	4,296,941
JMA 7_200711	JMA 7	2007-08	2007	11	200711	156,261	375,026	47,457	578,744
JMA 7_200712	JMA 7	2007-08	2007	12	200712	2,093,744	5,024,986	635,878	7,754,608
JMA 7_200801	JMA 7	2007-08	2008	1	200801	2,476,670	5,944,007	752,174	9,172,851
JMA 7_200802	JMA 7	2007-08	2008	2	200802	142,894	342,946	43,398	529,238
JMA 7_200803	JMA 7	2007-08	2008	3	200803	2,519	6,046	765	9,330
JMA 7_200804	JMA 7	2007-08	2008	4	200804	515,738	1,237,770	156,631	1,910,139
JMA 7_200805	JMA 7	2007-08	2008	5	200805	1,987	4,769	603	7,359
JMA 7_200806	JMA 7	2007-08	2008	6	200806	360,887	866,129	109,603	1,336,619
JMA 7_200807	JMA 7	2007-08	2008	7	200807	1,567,908	3,762,978	476,179	5,807,065
JMA 7_200808	JMA 7	2007-08	2008	8	200808	296,853	712,446	90,155	1,099,454
JMA 7_200809	JMA 7	2007-08	2008	9	200809	420,296	1,008,710	127,645	1,556,651
JMA 7_200810	JMA 7	2008-09	2008	10	200810	151,666	398,047	49,756	599,469
JMA 7_200811	JMA 7	2008-09	2008	11	200811	1,184,098	3,107,671	388,459	4,680,228
JMA 7_200812	JMA 7	2008-09	2008	12	200812	1,171,122	3,073,617	384,202	4,628,941
JMA 7_200901	JMA 7	2008-09	2009	1	200901	2,192,667	5,754,667	719,333	8,666,667
JMA 7_200902	JMA 7	2008-09	2009	2	200902	430,268	1,129,240	141,155	1,700,663
JMA 7_200903	JMA 7	2008-09	2009	3	200903	21,862	57,378	7,172	86,412
JMA 7_200904	JMA 7	2008-09	2009	4	200904	3,007	7,891	986	11,884
JMA 7_200905	JMA 7	2008-09	2009	5	200905	119,007	312,334	39,042	470,383
JMA 7_200906	JMA 7	2008-09	2009	6	200906	229,811	603,140	75,393	908,344
JMA 7_200907	JMA 7	2008-09	2009	7	200907	1,286,846	3,377,336	422,167	5,086,349
JMA 7_200908	JMA 7	2008-09	2009	8	200908	254,618	668,247	83,531	1,006,396
JMA 7_200909	JMA 7	2008-09	2009	9	200909	248,513	652,223	81,528	982,264
JMA 7_200910	JMA 7	2009-10	2009	10	200910	777,612	3,240,049	302,405	4,320,066
JMA 7_200911	JMA 7	2009-10	2009	11	200911	141,583	589,928	55,060	786,571
JMA 7_200912	JMA 7	2009-10	2009	12	200912	1,208,545	5,035,604	469,990	6,714,139

JMA_YrMnth	JMA_stock	FishYear	Year	Month	YrMnth	JMN kg	JMD kg	JMM kg	Total
JMA 7_201001	JMA 7	2009-10	2010	1	201001	1,306,732	5,444,717	508,174	7,259,623
JMA 7_201002	JMA 7	2009-10	2010	2	201002	422,587	1,760,778	164,339	2,347,704
JMA 7_201003	JMA 7	2009-10	2010	3	201003	85,227	355,115	33,144	473,486
JMA 7_201004	JMA 7	2009-10	2010	4	201004	370,371	1,543,212	144,033	2,057,616
JMA 7_201005	JMA 7	2009-10	2010	5	201005	154,061	641,919	59,912	855,892
JMA 7_201006	JMA 7	2009-10	2010	6	201006	646,021	2,691,756	251,231	3,589,008
JMA 7_201007	JMA 7	2009-10	2010	7	201007	445,895	1,857,898	173,404	2,477,197
JMA 7_201008	JMA 7	2009-10	2010	8	201008	23,735	98,895	9,230	131,860
JMA 7_201009	JMA 7	2009-10	2010	9	201009	25,044	104,349	9,739	139,132
JMA 7_201010	JMA 7	2010-11	2010	10	201010	318,131	1,325,547	123,718	1,767,396
JMA 7_201011	JMA 7	2010-11	2010	11	201011	4,233	17,636	1,646	23,515
JMA 7_201012	JMA 7	2010-11	2010	12	201012	1,295,579	5,398,247	503,836	7,197,662