Discards of Greater Amberjack and Red Snapper Calculated for Vessels with Federal Fishing Permits in the US South Atlantic

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Introduction

In August 2001, the Southeast Fisheries Science Center (SEFSC) initiated a program to collect information regarding the numbers of fish that were being discarded in Gulf of Mexico and South Atlantic fisheries. To collect this information, the SEFSC developed a form that supplements the existing vessel coastal logbook forms that are currently mandatory for those fisheries (Poffenberger and McCarthy, 2004). As part of the data that are provided for the Southeast Data, Assessment, and Review (SEDAR) Data Workshop for south Atlantic greater amberjack and red snapper, discard data from the Southeast Fisheries Science Center (SEFSC) coastal fisheries logbook program were used to estimate the numbers of fish that were discarded during the period January 1, 2002 through December 31, 2006.

A 20% random sample of the vessels with South Atlantic snapper-grouper, king mackerel, Spanish mackerel or shark permits were selected to report the number of animals discarded by species. To assure that the sample was representative of the total universe of vessels with these Federal permits, the universe of permitted vessels was stratified and a random sample selected, without replacement, from each stratum. One of the strata was geographical location where the vessel fished during 2000. There are two categories in this stratum - the Gulf of Mexico (Florida Keys to the Texas-Mexican border) and the South Atlantic (which extends from the North Carolina - Virginia border to the Florida Keys). The second stratum was based on the type of gear.

The selected fishermen were instructed to complete a supplemental discard form for every fishing trip that they made. If they did not have any discards for the trip, they were instructed to complete a discard form and write "no discards" on the form. If they did not fish during a calendar month and submitted a no fishing form, then they did not have to submit a discard form.

In addition to the numbers of discards, fishermen are asked to record their best estimate of the condition of the fish when they were released. The fishermen are given 6 options for the condition of released fish. These options are: all animals are dead, majority of the animals are dead, all animals are alive when released, majority of animals are alive, the fish are kept but not sold, and the condition of the animals is unknown. The fishermen are also asked to specify a reason why the fish (animals) were discarded. The choices are that the fish are discarded because of regulations or because the fish are unmarketable or unwanted.

Methods

The data set for this analysis includes all trips from sampled vessels that reported discards between January 1, 2002 and December 31, 2006 in the US south Atlantic. During this period, discard forms were submitted for 19,386 trips. Of those trips, discards were reported on 11,608 trips and 7,778 trips reported no animals were discarded. Discards of greater amberjack were reported on 273 trips or 2.4% of the trips where discards were reported. Discards of red snapper were reported on 276 trips (2.4%). By way of comparison, there were 383,427 trips reported to the coastal logbook program by vessels that have been issued a Federal permit to fish in the south Atlantic during 2002-2006. Greater amberjack landings were reported for 10,615 trips or about 2.8% of all trips. There were 7,955 trips landing red snapper (2.1%).

The objective of this analysis was to calculate the numbers of greater amberjack and red snapper discarded by vessels that fish commercially for species other than shrimp or other shellfish. Fishing activity for these analyses did not include the surface longline vessels that typically fish for swordfish, pelagic sharks, tunas, and other highly migratory species.

The number of trips that reported discards of greater amberjack or red snapper was low, limiting the degree to which the data could be stratified. Only handline and trolling vessels reported greater amberjack discards on more that a few trips. Greater amberjack discards from trolling vessels, while reported more often than any gear other than handlines, were infrequent and, apart from a single North Carolina report, were limited to reports from south Florida. Red snapper discards were, other than five trips, reported only from handline vessels (Table 1a). The numbers of greater amberjack and red snapper discards by year and gear type are presented in Table 1b. Handline trips accounted for the greatest number of trips reporting greater amberjack and red snapper landings in the south Atlantic (Table 1c) and the highest landings of those species (Table 1d). Dive trips had the second largest landings of greater amberjack followed by trolling trips, however, only one report of discarded greater amberjack was received from a dive trip. Handline trip data were used to calculate greater amberjack and red snapper discards in the south Atlantic. In addition, data from trolling trips were used to calculate greater amberjack discards from those vessels.

Data from trips using handlines and trolling were separately used to calculate greater amberjack discards. For red snapper, only data from handline vessels were used. Trips reporting discards of greater amberjack or red snapper were often fewer than 40 per year, therefore data for all years were combined for each species and gear examined. The only variable considered as a possible influence on the number of discards was region. This was defined for greater amberjack handline vessels as:

Region 1 = 2400 latitude to <3100 latitude
Region 2 = 3100 latitude to <3300 latitude
Region 3 = 3300 latitude to <3700 latitude

Region was defined for red snapper as:

Region 1 = 2400 latitude to <3000 latitude
Region 2 = 3000 latitude to <3100 latitude
Region 3 = 3100 latitude to <3300 latitude
Region 4 = 3300 latitude to <3700 latitude

The number of trips, amount of landings, and number of discards reported from south Atlantic handline vessels for the years 2002-2006 are provided in Table 2a along with the number of trips, pounds landed, and number of fish discarded from handline vessels reporting amberjack landings or discards. Table 2b contains a summary of trips, landings, and discards for all south Atlantic handline vessels and for handline vessels reporting red snapper landings or discards. Data for greater amberjack discards reported from trolling vessels were combined among all years and areas fished due to the very low number of trolling trips reporting greater amberjack discards (24 trips, 47 total discarded greater amberjack).

Generalized linear model (GLM) analyses were used to determine any significant effect region may have had and on the catch rates of handline trips reporting discards of greater amberjack and red snapper. Parameterization of each model was accomplished using a GLM procedure (GENMOD; Version 8.02 of the SAS System for Windows © 2000. SAS Institute Inc., Cary, NC, USA). A type3 model assuming lognormal error distribution was employed. The linking function selected was "normal", and the response variable was ln(CPUE). No analysis of the effect region may have had on the proportion of trips reporting discards was attempted because the proportion of trips with either greater amberjack or red snapper discards was so low that assumptions of the test were violated.

Results and Discussion

Significant differences among regions in cpue of handline vessel greater amberjack discards were identified in the GLM analysis. Regional differences were also found in red snapper discard cpue. Mean greater

amberjack and red snapper cpue of all handline vessel trips reporting to the discard logbook program within each region, including those that did not have greater amberjack or red snapper discards (zero discard trips), were used to calculate total discards:

*Calculated discards=Mean amberjack or red snapper discard cpue*total effort per region*

Yearly total effort (hook hours) of all trips by handline vessels within each region was multiplied by the mean discard cpue from the appropriate region to calculate total discards of greater amberjack and red snapper by handline vessels.

Calculated total discards for each region are provided in Table 3a for greater amberjack discarded from handline vessels. Prior to 1993, only 20% of Florida vessels were selected to report to the logbook program. The calculated discards for the region off Florida for 1992 were, therefore, expanded by a factor of five. This was done in all calculations of discards for 1992. Calculated discards for each region are summed by year to provide yearly total greater amberjack handline vessel discards in Table 3b.

Mean cpue of discarded greater amberjack was determined for all trolling vessels reporting to the discard logbook program fishing in the south Atlantic during the years 2002-2006. Yearly total effort in hook hours of all vessels reported as fishing with trolling gear was then multiplied by the mean cpue of trolling vessel greater amberjack discards to calculate the yearly total greater amberjack discards from trolling vessels (Table 4).

Calculated total discards for each region are provided in Table 5a for red snapper discarded from handline vessels. The calculated discards from each region were summed by year to provide yearly total red snapper handline vessel discards (Table 5b).

Usually, less than 10% of greater amberjack and red snapper were reported as dead or the majority of discarded fish were dead when released (Table 6). This total includes fish kept but not sold. In one region (region 2, 3100 latitude to <3300 latitude) greater amberjack were reported to have a higher amount of dead or majority dead discards (7.8% combined) and the highest amount of fish kept but not sold (9.1%). Fishers reported that more than 80% of discarded fish were alive or that most of the released fish were alive for both species and gears examined. The reason reported for discarding greater amberjack and red snapper was due to regulatory restrictions in nearly all reports. Only in region 3 for greater amberjack handline vessels was an appreciable percentage (22.6%) of discards reported as due to market conditions. In all other cases, discards were reported as due to regulations in nearly 100% of reporting trips.

The number of trips reporting either greater amberjack or red snapper in the US south Atlantic was very low and the number of individuals of those species reported as discarded was also low. Stratification of the available data was limited because of the small sample sizes and, therefore, likely does not capture much of the variation in numbers of discards within the greater amberjack and red snapper fisheries. How that may affect the number of calculated discards (over or under estimate) is unknown. This is particularly true of the greater amberjack troll fishery. Discards from the dive fisheries for greater amberjack and red snapper could not be calculated due to lack of discard reports from those fisheries. The methods used in prosecuting the dive fisheries, however, may limit the number of discards due to greater selectivity available to the dive fisher.

Literature Cited

Poffenberger, J. and K. McCarthy. 2004. Estimates of red snapper discards by vessels with Federal permits in the Gulf of Mexico. SEDAR 7-DW-22.

Table 1a. Number of south Atlantic trips reporting discards by year and gear fished.

Year	Diving			Gillnet			Handline			Longline			Other Gear			Trap			Trolling		
	aj	rs	other	aj	rs	other	aj	Rs	other	aj	rs	other	aj	rs	other	aj	rs	other	aj	rs	other
2002			2			208	102	89	2,124	2		23					2	79	4		241
2003	1		26	1		170	76	47	2,162			3			52			144	11	1	295
2004			24			155	20	39	1,462			6			27			41	1		306
2005		1	6			130	27	44	1,496	1		44			21			13	6		130
2006		1				105	19	52	1,378			44			1			6	2		135
Total	**1**	**2**	**58**	**1**		**768**	**244**	**271**	**8,622**	**3**		**120**			**101**		**2**	**283**	**24**	**1**	**1,107**

Table 1b. Number of south Atlantic discards reported by year and gear fished.

Year	Diving			Gillnet			Handline			Longline			Other Gear			Trap			Trolling		
	aj	rs	other	aj	rs	other	aj	Rs	other	aj	rs	other	aj	rs	other	aj	rs	other	aj	rs	other
2002			8			4,495	780	1,726	62,817	5		101					7	29,010	5		1,098
2003	1		195	2		10,147	618	985	39,298			10			185			20,260	24	1	925
2004			138			4,471	95	4,101	20,004			30			87			2,120	1		1,119
2005		1	22			3,453	189	780	28,986	3		1,649			123			1,016	10		408
2006		1				5,252	101	540	30,422			1,059			1			415	7		509
Total	**1**	**2**	**363**	**2**		**27,818**	**1,783**	**8,132**	**181,527**	**8**		**2,849**			**396**		**7**	**52,821**	**47**	**1**	**4,059**

Table 1c. South Atlantic trips reported to the coastal logbook program

Year	Diving			Gillnet			Handline			Longline			Other Gear			Trap			Trolling		
	aj	rs	other	aj	rs	other	aj	rs	other	aj	rs	other	aj	rs	other	aj	rs	other	aj	rs	other
2002	227	160	2,758	1	1	4,837	2,110	2,161	54,049	28	9	2,481			938	1	4	2,298	153	17	15,054
2003	187	159	2,382	3		4,663	1,933	1,448	50,397	31	16	2,278			1,384		2	1,950	229	17	14,520
2004	131	141	2,185	2		4,367	1,927	1,321	47,838	11	5	1,698			1,238		2	2,033	148	10	11,453
2005	107	115	2,017			5,259	1,731	1,205	43,963	8	3	1,524		1	1,423			1,422	84	20	10,479
2006	83	135	1,880			6,175	1,402	982	43,744	3	3	1,745		1	1,224			2,324	75	17	10,869
Total	735	710	11,222	6	1	25,301	9,103	7,117	239,991	81	36	9,726		2	6,207	1	8	10,027	689	81	62,375

Table 1d. South Atlantic landings (pounds) reported to the coastal logbook program

Year	Diving			Gillnet			Handline			Longline		
	aj	rs	other	aj	rs	other	aj	rs	other	aj	rs	other
2002	61,292	13,174	273,356	33	2	2,338,859	629,165	162,704	6,178,958	5,726	346	2,353,341
2003	52,314	11,696	255,479	87		2,194,830	575,697	122,645	6,076,745	2,180	538	2,141,710
2004	46,940	15,629	211,152	27		1,902,361	751,244	145,146	6,147,154	2,066	144	1,719,948
2005	37,241	8,171	204,178			2,167,524	766,897	107,477	6,055,623	343	162	1,539,730
2006	35,866	5,890	203,427			2,575,525	526,180	73,556	6,300,860	193	153	1,998,127
Total	233,654	54,561	1,147,593	147	2	11,179,100	3,249,182	611,529	30,759,340	10,508	1,344	9,752,857

Table 1d. continued

Year	Other Gear			Trap			Trolling		
	aj	rs	other	Aj	rs	other	aj	rs	other
2002			524,999	1	47	515,320	23,970	588	2,069,478
2003			849,181		30	570,455	18,993	867	2,365,203
2004			805,303		45	669,809	15,846	262	2,026,223
2005		14	737,849			432,240	13,851	1,298	2,037,157
2006		34	692,809			542,336	5,224	430	2,218,194
Total		49	3,610,140	1	122	2,730,159	77,885	3,445	10,716,255

Table 2a. South Atlantic handline trips and landings from amberjack regions reported to the coastal logbook program. Discards are reported in number of fish.

Region	All Handline Trips				Handline Trips with Amberjack			
	Logbook		Discards		Logbook		Discards	
	Trips	Pounds	Trips	N fish	Trips	Pounds	Trips	N fish
1	147,440	19,234,896	5,254	89,972	5,613	2,496,795	63	538
2	30,509	5,460,930	1,122	34,687	1,434	393,002	87	803
3	78,262	9,924,226	2,761	73,783	2,056	359,386	94	442

Table 2b. South Atlantic handline trips and landings from red snapper regions reported to the coastal logbook program. Discards are reported in number of fish.

Region	All Handline Trips				Handline Trips with Red Snapper			
	Logbook		Discards		Logbook		Discards	
	Trips	Pounds	Trips	N fish	Trips	Pounds	Trips	N fish
1	137,051	17,400,189	4,749	53,753	1,431	139,248	71	5,731
2	10,389	1,834,706	505	29,219	883	153,580	77	903
3	30,509	5,460,930	1,122	34,687	1,970	202,276	87	930
4	78,262	9,924,226	2,761	73,783	2,833	116,426	36	568

Table 3a. Calculated yearly total discards of greater amberjack by handline vessels for each region (regions: 1=2400 latitude to <3100 latitude; Region 2 = 3100 latitude to <3300 latitude; Region 3 = 3300 latitude to <3700 latitude). Discards are reported in number of fish.

Year	Region	Mean Discards per Hook Hour	Discard Standard Deviation	Total Effort (Hook Hours)	Calculated Discards
1992	1	0.00196	0.03451	175,300.0	1,719*
1992	2	0.00931	0.03644	195,164.0	1,818
1992	3	0.00897	0.06350	228,924.0	2,053
1993	1	0.00196	0.03451	461,193.5	905
1993	2	0.00931	0.03644	204,741.0	1,907
1993	3	0.00897	0.06350	337,962.4	3,031
1994	1	0.00196	0.03451	614,874.6	1,206
1994	2	0.00931	0.03644	297,076.0	2,767
1994	3	0.00897	0.06350	476,132.2	4,270
1995	1	0.00196	0.03451	574,714.5	1,127
1995	2	0.00931	0.03644	292,482.0	2,724
1995	3	0.00897	0.06350	440,122.0	3,947
1996	1	0.00196	0.03451	754,148.5	1,479
1996	2	0.00931	0.03644	401,744.0	3,741
1996	3	0.00897	0.06350	516,895.8	4,635
1997	1	0.00196	0.03451	916,390.5	1,797
1997	2	0.00931	0.03644	353,093.0	3,288
1997	3	0.00897	0.06350	577,396.0	5,178
1998	1	0.00196	0.03451	648,959.2	1,273
1998	2	0.00931	0.03644	298,594.1	2,781
1998	3	0.00897	0.06350	474,546.6	4,255
1999	1	0.00196	0.03451	691,737.7	1,357
1999	2	0.00931	0.03644	205,537.0	1,914
1999	3	0.00897	0.06350	418,476.3	3,753
2000	1	0.00196	0.03451	596,641.0	1,170
2000	2	0.00931	0.03644	225,280.5	2,098
2000	3	0.00897	0.06350	458,840.3	4,115
2001	1	0.00196	0.03451	512,061.1	1,004
2001	2	0.00931	0.03644	342,025.5	3,185
2001	3	0.00897	0.06350	429,314.1	3,850
2002	1	0.00196	0.03451	507,699.1	996
2002	2	0.00931	0.03644	292,181.9	2,721
2002	3	0.00897	0.06350	413,752.3	3,710
2003	1	0.00196	0.03451	470,800.3	923
2003	2	0.00931	0.03644	232,222.0	2,163
2003	3	0.00897	0.06350	341,045.0	3,058
2004	1	0.00196	0.03451	423,793.0	831
2004	2	0.00931	0.03644	167,070.6	1,556
2004	3	0.00897	0.06350	330,764.0	2,966
2005	1	0.00196	0.03451	344,250.3	675
2005	2	0.00931	0.03644	204,396.6	1,904
2005	3	0.00897	0.06350	297,695.0	2,670
2006	1	0.00196	0.03451	345,692.5	678
2006	2	0.00931	0.03644	248,067.9	2,310
2006	3	0.00897	0.06350	333,484.5	2,990

*in 1992 only 20% of vessels in Florida were required to report to the logbook program, the calculated discards for areas off Florida (region 1) was expanded by a factor of five.

Table 3b. Calculated yearly south Atlantic handline vessel greater amberjack discards. Discards are reported in number of fish.

Year	Calculated Discards
1992	5,590*
1993	5,842
1994	8,242
1995	7,798
1996	9,856
1997	10,263
1998	8,309
1999	7,023
2000	7,383
2001	8,039
2002	7,427
2003	6,144
2004	5,353
2005	5,248
2006	5,979

*in 1992 only 20% of vessels in Florida were required to report to the logbook program, the calculated discards for areas off Florida (region 1) was expanded by a factor of five.

Table 4. Yearly greater amberjack trolling vessel calculated discards. Discards are reported in number of fish.

Year	Mean Discards	Discard Standard Deviation	Total Effort (hook hours)	Calculated Discards
1992	0.00230	0.01305	70,263.5	161*
1993	0.00230	0.01305	101,504.5	233
1994	0.00230	0.01305	126,337.2	290
1995	0.00230	0.01305	113,356.5	260
1996	0.00230	0.01305	103,429.5	238
1997	0.00230	0.01305	132,169.0	304
1998	0.00230	0.01305	516,253.6	1,186
1999	0.00230	0.01305	493,706.2	1,134
2000	0.00230	0.01305	540,875.7	1,243
2001	0.00230	0.01305	414,732.5	953
2002	0.00230	0.01305	343,735.8	790
2003	0.00230	0.01305	304,693.1	700
2004	0.00230	0.01305	247,815.6	569
2005	0.00230	0.01305	220,684.3	507
2006	0.00230	0.01305	231,891.5	533

*in 1992 only 20% of vessels in Florida were required to report to the logbook program, the calculated discards for areas off Florida (region 1) was expanded by a factor of five.

Table 5a. Calculated yearly total discards of red snapper by handline vessels for each region (regions: 1=2400 latitude to <3000 latitude; Region 2 = 3000 latitude to <3100 latitude; Region 3 = 3100 latitude to <3300 latitude; Region 4= 3300 latitude to <3700 latitude). Discards reported as number.

Year	Region	Mean Discards	Discard Standard Deviation	Total Effort (hook hours)	Calculated Discards
1992	1	0.01839	0.22306	89,479.0	8,227*
1992	2	0.03093	0.19870	85,821.0	2,655
1992	3	0.03171	0.17207	195,164.0	6,188
1992	4	0.00534	0.05003	228,924.0	1,222
1993	1	0.01839	0.22306	374,852.0	6,893
1993	2	0.03093	0.19870	86,341.5	2,671
1993	3	0.03171	0.17207	204,741.0	6,492
1993	4	0.00534	0.05003	337,962.4	1,804
1994	1	0.01839	0.22306	519,938.1	9,561
1994	2	0.03093	0.19870	94,936.5	2,937
1994	3	0.03171	0.17207	297,076.0	9,420
1994	4	0.00534	0.05003	476,132.2	2,542
1995	1	0.01839	0.22306	418,420.5	7,694
1995	2	0.03093	0.19870	156,294.0	4,835
1995	3	0.03171	0.17207	292,482.0	9,274
1995	4	0.00534	0.05003	440,122.0	2,349
1996	1	0.01839	0.22306	523,916.5	9,634
1996	2	0.03093	0.19870	230,232.0	7,122
1996	3	0.03171	0.17207	401,744.0	12,739
1996	4	0.00534	0.05003	516,895.8	2,759
1997	1	0.01839	0.22306	709,519.5	13,047
1997	2	0.03093	0.19870	206,871.0	6,400
1997	3	0.03171	0.17207	353,093.0	11,196
1997	4	0.00534	0.05003	577,396.0	3,082
1998	1	0.01839	0.22306	522,294.2	9,604
1998	2	0.03093	0.19870	126,665.0	3,918
1998	3	0.03171	0.17207	298,594.1	9,468
1998	4	0.00534	0.05003	474,546.6	2,533
1999	1	0.01839	0.22306	572,769.7	10,533
1999	2	0.03093	0.19870	118,819.0	3,676
1999	3	0.03171	0.17207	205,537.0	6,517
1999	4	0.00534	0.05003	418,476.3	2,234
2000	1	0.01839	0.22306	495,325.9	9,108
2000	2	0.03093	0.19870	100,503.1	3,109
2000	3	0.03171	0.17207	225,280.5	7,143
2000	4	0.00534	0.05003	458,840.3	2,449
2001	1	0.01839	0.22306	420,280.1	7,728
2001	2	0.03093	0.19870	90,989.0	2,815
2001	3	0.03171	0.17207	342,025.5	10,845
2001	4	0.00534	0.05003	429,314.1	2,292
2002	1	0.01839	0.22306	399,330.6	7,343
2002	2	0.03093	0.19870	107,208.5	3,316
2002	3	0.03171	0.17207	292,181.9	9,265
2002	4	0.00534	0.05003	413,752.3	2,209
2003	1	0.01839	0.22306	378,842.3	6,966
2003	2	0.03093	0.19870	90,086.0	2,787
2003	3	0.03171	0.17207	232,222.0	7,363
2003	4	0.00534	0.05003	341,045.0	1,821

*in 1992 only 20% of vessels in Florida were required to report to the logbook program, the calculated discards for areas off Florida (region 1) was expanded by a factor of five.

Table 5a. continued

Year	Region	Mean Discards	Discard Standard Deviation	Total Effort	Calculated Discards
2004	1	0.01839	0.22306	343,562.0	6,318
2004	2	0.03093	0.19870	78,631.0	2,432
2004	3	0.03171	0.17207	167,070.6	5,298
2004	4	0.00534	0.05003	330,764.0	1,766
2005	1	0.01839	0.22306	273,803.3	5,035
2005	2	0.03093	0.19870	70,031.0	2,166
2005	3	0.03171	0.17207	204,396.6	6,481
2005	4	0.00534	0.05003	297,695.0	1,589
2006	1	0.01839	0.22306	267,566.5	4,920
2006	2	0.03093	0.19870	75,894.0	2,348
2006	3	0.03171	0.17207	248,067.9	7,866
2006	4	0.00534	0.05003	333,484.5	1,780

Table 5b. Calculated yearly south Atlantic handline vessel red snapper discards. Discards are reported in number of fish.

Year	Calculated Discards
1992	18,292*
1993	17,860
1994	24,459
1995	24,153
1996	32,254
1997	33,725
1998	25,524
1999	22,959
2000	21,810
2001	23,680
2002	22,133
2003	18,937
2004	15,813
2005	15,272
2006	16,914

*in 1992 only 20% of vessels in Florida were required to report to the logbook program, the calculated discards for areas off Florida (region 1) was expanded by a factor of five.

Table 6. Estimated condition at release of greater amberjack and red snapper discards. Numbers of fish and percent of total, in parentheses) are reported by gear and region.

Species	Region	All Dead	Majority Dead	All Alive	Majority Alive	Kept	Unknown	Unreported
Greater Amberjack (handline)	1			425 (79)	102 (18.9)	10 (1.9)		1 (0.2)
	2	46 (5.7)	17 (2.1)	379 (47.2)	263 (32.7)	73 (9.1)		25 (3.1)
	3	1 (0.2)		375 (84.8)	35 (7.9)	31 (7.0)		
Greater Amberjack (trolling)	1		3 (6.4)	34 (72.3)	10 (21.3)			
Red Snapper (handline)	1		25 (0.4)	4,203 (73.3)	1,502 (26.2)	1 (0.0)		
	2		79 (8.7)	214 (23.7)	609 (67.4)	1 (0.1)		
	3	34 (3.6)	63 (6.8)	397 (42.7)	434 (46.7)			2 (0.2)
	4		31 (5.4)	520 (91.5)	17 (3.0)			