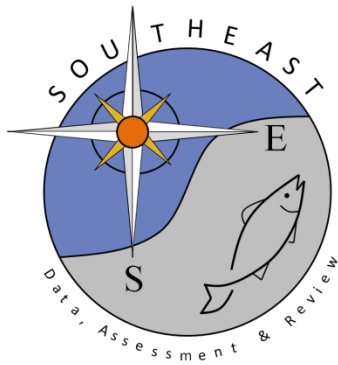


Discards of Spanish Mackerel Calculated for Commercial Fishing Vessels with Federal Fishing Permits in the US South Atlantic

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Discards of Spanish Mackerel Calculated for Commercial Fishing 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 commercial coastal fisheries. To collect those data, 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 were provided for the Southeast Data, Assessment, and Review (SEDAR) Data Workshop for South Atlantic Spanish Mackerel, discard data from the 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, 2020. There has been no commercial observer program of sufficient temporal and spatial coverage in the South Atlantic snapper-grouper fishery that may have provided data for use in a stock assessment. For the SEDAR 78 stock assessment fisher reported discard logbook data were used to calculate commercial fishery discards of Spanish Mackerel.

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 those Federal permits, the universe of permitted vessels was stratified and a random sample selected, weighted by the effort reported for each vessel during the previous year, from each stratum. One of the strata was the geographical region where the vessel reported fishing during the previous year. There were 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 used: handline, electric/hydraulic reel (bandit rig), longline, trolling, trap, gillnet diving, and other gear.

The selected fishers 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, fishers were asked to record their best estimate of the condition of the fish when they were released. Fishers were given 6 options for the condition of released fish: all animals were dead, majority of the animals were dead, all animals were alive when released, majority of animals were alive, the fish were kept but not sold, and the condition of the animals is unknown. Fishers were also asked to specify a reason why the fish were discarded: due to regulations or the fish were unmarketable or unwanted.

Methods

The objective of this analysis was to calculate the numbers of Spanish Mackerel discarded by vessels that fish commercially for species other than shrimp or other shellfish. Data reported from surface longline vessels that typically fish for swordfish, pelagic sharks, tunas, and other highly migratory

species were not included in these analyses. The available data set for commercial discard calculation included all trips from vessels that reported discards between January 1, 2002 and December 31, 2020 in the US South Atlantic. During that period, discard forms were submitted for 137,685 trips. Of those trips, discards were reported on 37,885 trips and 99,800 trips reported no animals were discarded. Discards of Spanish Mackerel were reported on 429 trips or 0.3% of the submitted discard logbooks. By way of comparison, there were 584,234 trips reported to the coastal logbook program by vessels that have been issued a Federal permit to fish in the South Atlantic during 2002-2020. Spanish Mackerel landings were reported for 80,830 trips or about 13.8% of all trips.

The number of trips that reported discards of Spanish Mackerel was low, limiting the complexity of any analysis. Only vertical line (handline and electric/hydraulic reels), gillnet, and trolling vessels reported Spanish Mackerel discards on more than a few trips (Table 1a). The numbers of Spanish Mackerel reported as discarded by year and gear type are presented in Table 1b. Vertical line trips accounted for the greatest number of trips reporting Spanish Mackerel landings in the South Atlantic (Table 1c). Highest landings of Spanish Mackerel were reported for gillnet trips (Table 1d). Vertical line trips had the second largest landings of Spanish Mackerel followed by other gear (primarily cast net) trips. Unsurprisingly, very few reports of discarded Spanish Mackerel were received from dive and longline trips. Spanish Mackerel discard calculation was limited to data reported from vertical line, gillnet, and trolling trips.

Analyses followed the methods of SEDAR 28 (McCarthy, 2012) with some additional data filtering as recommended during SEDARs 32 and 41 (McCarthy, 2013 and 2014). A data filter designed to address possible underreporting of commercial discards was included in this analysis. Fishers remain in reporting compliance by returning discard logbooks with reports of “no discards”. The percentage of discard reports returned with “no discards” from vertical line, gillnet, and trolling trips has increased from 52 to 82 percent in the US South Atlantic over the period 2002-2020. During the SEDAR32 data workshop the issue of possible underreporting of commercial discards was discussed at length. The working group recommended that data be filtered to remove records from vessels that never reported discards of any species during a year. The SEDAR32 working group acknowledged that some South Atlantic commercial fishing trips may not have had discards of any species and discussed the likely maximum number of trips by a vessel without a report of discards. Following the SEDAR 32 and 41 commercial working groups recommendations, data were excluded from vertical line vessels that reported more than 20 trips without reporting discards of any species (the mean number of trips prior to the first trip with reported discards plus two standard deviations above that mean), more than 25 trips (mean plus two standard deviations) without a report of discards in the gillnet fishery, or more than 24 trips (mean plus two standard deviations) without a report of discards in the trolling fishery.

Following the methods of SEDAR 28, discard rates of vertical line and trolling vessels were calculated as the mean rate (discards per hook hour fished) over all years (2002-2020) for the SEDAR 78 assessment. Discards rates of Spanish Mackerel reported from gillnet vessels was calculated as the mean rate (discards per square yard hours of net fished) over all years for the assessment.

Yearly gear specific total effort of all trips by vertical line, gillnet, and trolling vessels was multiplied by the appropriate gear specific mean discard rate (mean over all years 2002-2020) to calculate yearly total discards of Spanish Mackerel by gear.

*Calculated discards per region= 2002-2020 mean Spanish Mackerel discard rate *yearly total effort*

For years prior to 2002 (the first year of discard data), the mean discard rate for the years 2002-2020 was used to calculate discards for the years 1993-2001 when only effort data were available. Gillnet effort data was not reported to the coastal logbook program prior to 1998, therefore the gillnet time series includes the years 1998-2020. The number of “kept” discards (those fish that were kept, but not sold, by the crew) were calculated using similar methods than those used to calculate discards.

Results and Discussion

The number of trips, pounds landed, number of discards of both Spanish Mackerel and all other reported species are provided by gear in Tables 1a – 1d (see totals row).

Calculated total commercial discards and kept/not sold fish for each year are provided in Table 2 for Spanish Mackerel discarded from vertical line vessels. Spanish Mackerel were discarded in approximately equal numbers as those reported as kept/not sold each year from vertical line vessels. Calculated discards and total kept/not sold Spanish Mackerel from gillnet vessels are shown in Table 3 and from trolling vessels in Table 4. Very few Spanish Mackerel were kept/not sold in the gillnet fishery. Approximately equal numbers of Spanish Mackerel were discarded as were kept/not sold in the trolling fishery. Discards and kept/not sold Spanish Mackerel were calculated to be very low in the trolling fishing.

Less than 5% of Spanish Mackerel were reported as dead or the majority of discarded fish were dead when released from vertical line and trolling vessels (Table 5). This total includes fish kept but not sold. Fishers reported that more than 45% of discarded Spanish Mackerel from vertical line vessels were alive or that most of the released fish were alive. Only 33% of discarded Spanish Mackerel reported from trolling vessels were alive or most of the released fish were alive. A high percentage of Spanish Mackerel were reported as kept/not sold from vertical line and trolling vessels (42.6% and 65.7%, respectively). Gillnet vessels reported a high percentage of fished released as dead or that the majority of released fish were dead (97.3% combined). The reason reported for discarding Spanish Mackerel was due to regulatory (not legal size, out of season, other regulations) restrictions for 73.9% of discards from gillnet vessels, 21.3% of vertical line discards, and 67.3% of trolling discards. Market conditions were reported as the reason for discarding Spanish Mackerel for 26.1% of gillnet discards, 67.3% of vertical line discards, and 21.9% of trolling discards. The remaining discards (11.1% vertical line and 10.8% trolling did not include the reason for discarding in the discard logbook report.

The number of trips reporting Spanish Mackerel 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 Spanish Mackerel fisheries. How that may affect the number of calculated discards (over or under estimate) is unknown. This is particularly true of the Spanish Mackerel trolling fishery.

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

Year	Diving		Gillnet		Vertical line		Longline		Other Gear		Trap		Trolling					
	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other				
2002		14		21	Confidential	1,355		15		47		65		881				
2003		49		289	Confidential	1,926		12		103		96	3	1,084				
2004		89		5	Confidential	1,742		16		73		42	5	690				
2005		55	Confidential	231		9	1,652		26		74	22	5	477				
2006		53		108		15	1,273		52		47	20	Confidential	564				
2007		115	Confidential	73		7	2,884		85		146	79		1,802				
2008		186		440		25	5,274		168		87	235	16	3,080				
2009		99		8	311	11	2,854		62		61	228	6	1,931				
2010		230		508		16	5,195		353	Confidential	219	196	6	3,590				
2011		252		719		20	5,774		365		211	83	3	3,094				
2012		261	Confidential	617		13	5,295		252		190	140	5	2,806				
2013		302		675		43	5,646		236		119	178	Confidential	1,987				
2014		268		675		36	5,683		320		66	176	5	2,473				
2015		340		431		17	5,617		301		49	131	3	2,477				
2016	3	266		465		16	6,673		304	Confidential	152	84		2,911				
2017		318		24	446	Confidential	5,733		403		208	137	4	3,453				
2018		307	Confidential	425	Confidential	4,981		254		132		123	13	2,170				
2019		189		25	486		4,760		101	Confidential	244	76	4	2,103				
2020		309		12	544	Confidential	3,622		165		143	21	Confidential	2,043				
Total	3	3,702		95	8,006		228	77,939	0		3,490	Confidential	2,371	0	2,132		78	39,616

Confidential = fewer than three vessels reporting within a cell.

Table 1b. Number of South Atlantic discards (number of fish) reported by year and gear fished.

Year	Diving		Gillnet		Vertical line		Longline		Other Gear		Trap		Trolling	
	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other
2002		45	190	4,275	Confidential	59,421		186			31,604			1,119
2003		196		9,632	Confidential	35,989		10	Confidential	160	22,682		36	984
2004		152	38	4,316	Confidential	24,435		30	Confidential	77	2,283		218	923
2005		23	Confidential	12,125		65	39,013	1,642		123	1,542		41	531
2006		1		5,255		60	29,929	1,138		1	1,405	Confidential		535
2007		9	Confidential	1,787		32	60,996	204		7	3,554			2,133
2008		161		5,063		73	169,554	2,034		70	33,554		69	7,183
2009		113	155	3,029		72	44,465	3,278		0	38,639		69	2,550
2010		48		10,481		335	113,774	5,019	Confidential	5	22,809		177	1,715
2011				7,488		91	91,929	2,179		142	6,594		52	1,011
2012		10	Confidential	4,979		52	89,562	1,967		31	39,014		91	1,648
2013		12		5,346		224	109,283	1,810		29	43,278	Confidential		1,391
2014		339		34,681		372	122,933	7,888		1	35,518		42	2,136
2015		61		11,472		178	95,973	2,757		3	20,700		54	2,967
2016	8	435		11,449		270	69,041	1,242	Confidential	195	6,305			3,622
2017		3	137	10,400	Confidential	52,894		1,455		132	19,763		50	2,264
2018		3	Confidential	3,970	Confidential	34,161		467		85	16,225		146	3,098
2019		61	77	5,671			24,385	340	Confidential	195	12,006		20	1,828
2020		20	545	2,756	Confidential	20,460		747		1,256	2,251	Confidential		916
Total	8	1,692	1,168	154,175	1,904	1,288,197	0	34,393	Confidential	2,371	0	359,726	1,100	38,554

Confidential = fewer than three vessels reporting within a cell.

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

Year	Diving		Gillnet		Vertical line		Longline		Other Gear		Trap		Trolling	
	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other
2002	Confidential	979	1,409	1,391	1,160	16,445	Confidential	876	426	314	Confidential	833	1,000	9,148
2003	4	932	1,146	1,237	1,029	16,810	Confidential	775	613	472	Confidential	800	743	9,521
2004	5	792	1,048	1,295	1,242	15,526		603	632	368		849	454	7,400
2005	6	696	1,316	1,534	1,164	13,932	Confidential	522	661	436		620	641	6,602
2006	4	670	1,578	1,743	1,477	14,806		650	659	388		805	652	7,145
2007	Confidential	881	1,731	1,909	1,844	15,542		533	610	414		628	908	8,562
2008	8	762	1,309	1,650	1,776	15,959		617	343	268		564	869	8,852
2009		776	1,581	1,863	1,907	18,113		1,002	356	243	Confidential	776	1,114	9,680
2010	Confidential	775	1,145	1,416	2,084	15,794		939	682	397		407	952	7,793
2011	4	928	1,308	1,714	2,380	15,706		716	561	374		237	688	6,635
2012	Confidential	935	1,449	1,790	2,217	14,308		834	433	372		328	657	6,097
2013	59	1,025	1,246	1,467	2,465	13,749		734	216	381		374	659	5,151
2014	16	1,064	1,282	1,622	2,642	16,427		681	282	339		302	829	6,044
2015	17	1,042	1,094	1,176	1,974	15,107		532	177	351	Confidential	232	579	6,131
2016	10	825	1,015	1,261	2,044	15,750		666	210	378		181	688	6,686
2017	11	842	891	1,105	1,754	15,666	Confidential	631	231	466	Confidential	297	615	7,389
2018	Confidential	737	1,259	1,591	1,878	14,826		448	194	415		221	755	6,401
2019	11	816	1,081	1,547	1,919	15,098		335	444	414		216	740	6,762
2020	7	837	1,037	1,338	1,630	12,673	Confidential	425	245	319		68	584	5,839
Total	162	16,314	23,925	28,649	34,586	292,237	Confidential	12,519	7,975	7,109	Confidential	8,738	14,127	137,838

Confidential = fewer than three vessels reporting within a cell.

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

Year	Diving		Gillnet		Vertical line		Longline		Other Gear		Trap		Trolling	
	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other	SM	other
2002	Con	346,628	925,589	1,407,745	244,534	6,621,378	Con	2,334,003	428,491	63,240	Con	508,893	89,689	1,995,985
2003	105	319,384	750,456	1,441,463	251,466	6,436,179	Con	2,138,759	745,874	74,681	Con	568,346	56,733	2,323,253
2004	37	273,684	551,983	1,367,013	362,644	6,671,825		1,700,369	699,317	75,754		669,044	55,628	1,977,406
2005	65	249,344	866,552	1,526,168	463,355	6,407,621	Con	1,515,151	645,855	69,464		432,240	76,853	1,966,347
2006	141	245,552	1,281,353	1,532,076	594,991	6,463,354		2,011,964	664,834	88,817		543,873	63,422	2,209,515
2007	Con	315,530	1,321,289	1,313,219	687,875	7,009,366		974,705	519,541	126,771		421,869	101,688	2,539,572
2008	77	333,823	790,798	1,257,822	633,775	7,414,464		1,128,537	309,535	62,282		436,161	113,403	2,661,000
2009		329,606	956,338	1,318,454	631,965	8,124,951		2,092,680	325,987	34,844	Con	629,327	149,646	2,770,122
2010	Con	362,463	632,557	1,435,274	860,569	7,389,155		1,773,088	870,989	117,348		433,637	194,486	2,288,747
2011	23	376,450	547,357	1,577,145	954,606	7,030,570		1,410,872	587,696	130,566		317,884	118,849	1,946,938
2012	Con	365,020	780,360	1,355,985	726,203	6,444,162		1,336,639	323,637	230,404		267,550	93,717	1,636,739
2013	1,407	341,822	709,829	1,110,788	739,130	5,986,027		1,422,067	102,779	185,652		284,178	64,623	1,323,166
2014	290	368,021	510,320	1,562,490	1,036,980	6,414,210		1,576,606	201,226	176,793		186,591	68,121	1,622,202
2015	193	325,306	551,485	1,118,245	686,139	6,299,330		1,368,529	113,129	107,359	Con	176,908	28,475	1,522,146
2016	201	288,780	559,089	1,305,226	942,117	6,431,246		1,146,018	202,671	123,084		129,741	30,540	1,706,611
2017	112	325,996	549,178	874,421	927,439	6,744,958	Con	1,087,612	240,322	148,498	Con	224,423	44,384	2,046,639
2018	Con	300,238	806,586	1,218,689	1,032,653	5,587,727		838,660	192,399	80,353		196,653	40,718	1,684,268
2019	73	257,321	580,161	1,358,660	866,827	5,871,969		742,476	414,637	70,745		180,471	70,083	1,809,501
2020	95	255,637	686,878	1,230,604	689,933	5,075,127	Con	581,799	230,755	35,380		44,069	44,610	1,518,792
Total	2,819	5,980,605	14,358,159	25,311,485	13,333,199	124,423,621	Con	27,180,537	7,819,672	2,002,036	Con	6,651,856	1,505,666	37,548,951

Con = Confidential data; i.e., fewer than three vessels reporting within a cell.

Table 2. Calculated yearly South Atlantic vertical line vessel Spanish Mackerel discards. Discards are reported in number of fish. The numbers of kept fish (kept as bait or retained by the crew, but not sold) are also reported.

Year	Mean Discards per Hook Hour	Discard Rate Standard Deviation	Total Effort (Hook Hours)	Calculated Discards	Mean Kept Fish Per Hook Hour	Kept Rate Standard Deviation	Calculated Kept Fish
1993	0.00187	0.0464	1,263,256	2,363	0.00196	0.0646	2,483
1994	0.00187	0.0464	1,555,301	2,910	0.00196	0.0646	3,057
1995	0.00187	0.0464	1,626,567	3,043	0.00196	0.0646	3,197
1996	0.00187	0.0464	1,624,674	3,040	0.00196	0.0646	3,194
1997	0.00187	0.0464	1,670,510	3,125	0.00196	0.0646	3,284
1998	0.00187	0.0464	1,331,882	2,492	0.00196	0.0646	2,618
1999	0.00187	0.0464	1,145,160	2,142	0.00196	0.0646	2,251
2000	0.00187	0.0464	1,124,274	2,103	0.00196	0.0646	2,210
2001	0.00187	0.0464	1,211,625	2,267	0.00196	0.0646	2,382
2002	0.00187	0.0464	1,185,269	2,218	0.00196	0.0646	2,330
2003	0.00187	0.0464	1,033,570	1,934	0.00196	0.0646	2,032
2004	0.00187	0.0464	923,963	1,729	0.00196	0.0646	1,816
2005	0.00187	0.0464	854,853	1,599	0.00196	0.0646	1,680
2006	0.00187	0.0464	931,690	1,743	0.00196	0.0646	1,831
2007	0.00187	0.0464	983,662	1,840	0.00196	0.0646	1,934
2008	0.00187	0.0464	978,718	1,831	0.00196	0.0646	1,924
2009	0.00187	0.0464	1,083,668	2,027	0.00196	0.0646	2,130
2010	0.00187	0.0464	896,980	1,678	0.00196	0.0646	1,763
2011	0.00187	0.0464	854,778	1,599	0.00196	0.0646	1,680
2012	0.00187	0.0464	757,766	1,418	0.00196	0.0646	1,490
2013	0.00187	0.0464	799,538	1,496	0.00196	0.0646	1,572
2014	0.00187	0.0464	855,101	1,600	0.00196	0.0646	1,681
2015	0.00187	0.0464	839,141	1,570	0.00196	0.0646	1,650
2016	0.00187	0.0464	803,976	1,504	0.00196	0.0646	1,580
2017	0.00187	0.0464	763,376	1,428	0.00196	0.0646	1,501
2018	0.00187	0.0464	723,040	1,353	0.00196	0.0646	1,421
2019	0.00187	0.0464	696,883	1,304	0.00196	0.0646	1,370
2020	0.00187	0.0464	666,349	1,247	0.00196	0.0646	1,310

Table 3. Calculated yearly South Atlantic gillnet vessel Spanish Mackerel discards. Discards are reported in number of fish. The numbers of kept fish (kept as bait or retained by the crew, but not sold) are also reported.

Year	Mean Discards per Hook Hour	Discard Rate Standard Deviation	Total Effort (Sq. Yd. Hours)	Calculated Discards	Mean Kept Fish Per Sq. Yd. Hour Fished	Kept Rate Standard Deviation	Calculated Kept Fish
1998	0.000067	0.00092	64,349,302	4,290	0.0000021	0.00013	133
1999	0.000067	0.00092	112,874,991	7,525	0.0000021	0.00013	233
2000	0.000067	0.00092	87,365,691	5,824	0.0000021	0.00013	180
2001	0.000067	0.00092	82,426,485	5,495	0.0000021	0.00013	170
2002	0.000067	0.00092	135,813,031	9,054	0.0000021	0.00013	280
2003	0.000067	0.00092	60,229,633	4,015	0.0000021	0.00013	124
2004	0.000067	0.00092	53,654,649	3,577	0.0000021	0.00013	111
2005	0.000067	0.00092	65,975,117	4,398	0.0000021	0.00013	136
2006	0.000067	0.00092	56,112,035	3,741	0.0000021	0.00013	116
2007	0.000067	0.00092	53,186,326	3,546	0.0000021	0.00013	110
2008	0.000067	0.00092	56,929,147	3,795	0.0000021	0.00013	117
2009	0.000067	0.00092	46,933,097	3,129	0.0000021	0.00013	97
2010	0.000067	0.00092	42,170,853	2,811	0.0000021	0.00013	87
2011	0.000067	0.00092	47,502,210	3,167	0.0000021	0.00013	98
2012	0.000067	0.00092	49,347,751	3,290	0.0000021	0.00013	102
2013	0.000067	0.00092	40,196,551	2,680	0.0000021	0.00013	83
2014	0.000067	0.00092	42,868,931	2,858	0.0000021	0.00013	88
2015	0.000067	0.00092	22,455,237	1,497	0.0000021	0.00013	46
2016	0.000067	0.00092	30,343,008	2,023	0.0000021	0.00013	63
2017	0.000067	0.00092	23,956,145	1,597	0.0000021	0.00013	49
2018	0.000067	0.00092	26,608,949	1,774	0.0000021	0.00013	55
2019	0.000067	0.00092	23,302,572	1,553	0.0000021	0.00013	48
2020	0.000067	0.00092	17,904,602	1,194	0.0000021	0.00013	37

Table 4. Yearly Spanish Mackerel trolling vessel calculated discards. Discards are reported in number of fish. The numbers of kept fish (kept as bait or retained by the crew, but not sold) are also reported.

Year	Mean Discards per Hook Hour	Discard Rate Standard Deviation	Total Effort (Hook Hours)	Calculated Discards	Mean Kept Fish Per Hook Hour	Kept Rate Standard Deviation	Calculated Kept Fish
1993	0.00103	0.0707	102,778	106	0.00123	0.0518	126
1994	0.00103	0.0707	125,545	130	0.00123	0.0518	154
1995	0.00103	0.0707	116,041	120	0.00123	0.0518	142
1996	0.00103	0.0707	104,762	108	0.00123	0.0518	128
1997	0.00103	0.0707	133,601	138	0.00123	0.0518	164
1998	0.00103	0.0707	483,758	500	0.00123	0.0518	593
1999	0.00103	0.0707	461,378	477	0.00123	0.0518	566
2000	0.00103	0.0707	487,372	504	0.00123	0.0518	598
2001	0.00103	0.0707	406,316	420	0.00123	0.0518	498
2002	0.00103	0.0707	329,298	340	0.00123	0.0518	404
2003	0.00103	0.0707	304,310	315	0.00123	0.0518	373
2004	0.00103	0.0707	245,516	254	0.00123	0.0518	301
2005	0.00103	0.0707	218,123	226	0.00123	0.0518	267
2006	0.00103	0.0707	235,466	243	0.00123	0.0518	289
2007	0.00103	0.0707	295,107	305	0.00123	0.0518	362
2008	0.00103	0.0707	281,013	291	0.00123	0.0518	345
2009	0.00103	0.0707	309,586	320	0.00123	0.0518	380
2010	0.00103	0.0707	247,222	256	0.00123	0.0518	303
2011	0.00103	0.0707	202,704	210	0.00123	0.0518	249
2012	0.00103	0.0707	197,001	204	0.00123	0.0518	242
2013	0.00103	0.0707	165,678	171	0.00123	0.0518	203
2014	0.00103	0.0707	194,805	201	0.00123	0.0518	239
2015	0.00103	0.0707	191,842	198	0.00123	0.0518	235
2016	0.00103	0.0707	219,724	227	0.00123	0.0518	269
2017	0.00103	0.0707	230,700	239	0.00123	0.0518	283
2018	0.00103	0.0707	186,646	193	0.00123	0.0518	229
2019	0.00103	0.0707	184,744	191	0.00123	0.0518	227
2020	0.00103	0.0707	170,721	177	0.00123	0.0518	209

Table 5. Estimated condition at release of Spanish Mackerel discards by gear. Numbers of fish and percent of total, in parentheses.

Species	All Dead	Majority Dead	All Alive	Majority Alive	Kept	Unknown	Unreported
Spanish Mackerel (vertical line)	60 (3.2%)	Confidential	819 (43.0%)	37 (1.9%)	811 (42.6%)	Confidential	Confidential
Spanish Mackerel (gillnet)	880 (75.3%)	257 (22.0%)	Confidential	Confidential	17 (1.5%)	Confidential	Confidential
Spanish Mackerel (trolling)	Confidential	Confidential	296 (26.9%)	67 (6.1%)	723 (65.7%)	Confidential	Confidential

Confidential = fewer than three vessels reporting within a cell.