

## **Discards of Greater Amberjack, Gag Grouper, Red Grouper, and Red Snapper, in response to a Council request**

### **July 2022 SSC meeting SEFSC, Sustainable Fisheries Division, Gulf Fisheries Branch**

The Southeast Fisheries Science Center received the Council's request for a presentation on the discard data available for Greater Amberjack, Gag grouper, Red Grouper, and Red Snapper on March 17<sup>th</sup>, 2022. The Council requested that these data be presented annually by species and directed fleet (e.g., commercial vertical line, commercial longline, charter for-hire, private vessels) and fishing sector (i.e., commercial, for-hire recreational, private recreational), and asked that it be presented in the current Marine Recreational Information Program effort data currency (i.e., Coastal Household Telephone Survey or Fishing Effort Survey, as applicable). We agreed to tabulate and present what was used in the most recent assessment of each species, though that may not be to the level of detail requested in the original memo.

#### Greater Amberjack:

Greater Amberjack (GAJ) commercial discards from the vertical and longline fleets from 1993 to 2018 were used in the SEDAR 70 base model. The units are pounds whole weight, though it was provided and presented here in both weight and numbers (Tables 1 and 2, and Figure 1). The GAJ recreational discards were input as a combined charterboat and private boat fleet, as well as a headboat fleet. All recreational discards are in numbers and in MRIP-FES or SRHS units (Table 3 and Figure 2).

#### Gag Grouper:

Gag Grouper commercial discards from the vertical and longline fleets from 1993-2019 were used in the SEDAR 72 base model. The units are 1000s of fish (Table 4 and Figure 3). The Gag recreational discards are also in the units of 1000s of fish and presented in MRIP-FES and SRHS units in Table 4 and Figure 4.

#### Red Grouper:

For SEDAR 61, Red Grouper commercial discards are available from 1990 to 2006 for trap gear (Table 5 and Figure 5). Commercial vertical line and longline discards are available from 1993-2017 (Table 5 and Figure 5), and recreational discards are available from 1981-2017 (Table 5 and Figure 6). All SEDAR 61 discards are in numbers of fish.

#### Red Snapper:

The SEDAR 74 data were compiled for Red Snapper, and at the time of this response, the data have not yet been finalized. We have included what was provided to date with the intention of fulfilling the Council's request with the most recent data possible. There are three areas of the stock ID for SEDAR 74: Western, Central, and Eastern. Each of the fleet annotations contain a W, C, or E to notate the area the data are meant to describe. Commercial discards are available from 2007 to 2019 (Table 6 and Figure 7). Recreational discards are available from 1981 to 2019, and are reported in MRIP-FES, SRHS, or state surveys calibrated to MRIP-FES units (Table 7 and Figure 8). Closed season discards are reported in Table 8 from 1997 to 2019, and are illustrated in Figure 9. All Red Snapper discards are reported in numbers and are preliminary.

Table 1. Time series of GAJ vertical line discards in weight (lb) and number with associated standard errors (SE).

Year	Estimated Discards in Weight	SE of Estimated Discards in Weight	Estimated Discards in Number	SE of Estimated Discards in Number
1993	332,312.7	96,193.7	30,176.4	5,954.4
1994	337,263.8	97,626.8	30,626.0	6,043.1
1995	412,439.9	119,387.9	37,452.5	7,390.1
1996	427,830.4	123,842.9	38,850.1	7,665.8
1997	420,826.8	121,815.6	38,214.1	7,540.3
1998	332,672.6	96,297.9	32,712.3	6,454.7
1999	407,920.8	118,079.7	42,348.7	8,356.2
2000	340,515.5	98,568.1	33,293.6	6,569.5
2001	358,407.0	103,747.1	36,398.0	7,182.0
2002	331,300.7	95,900.7	31,648.1	6,244.8
2003	377,137.8	109,169.1	35,688.8	7,042.1
2004	377,639.4	109,314.3	36,324.8	7,167.6
2005	286,412.1	82,906.9	27,016.4	5,330.8
2006	234,669.5	67,929.1	22,089.7	4,358.7
2007	232,404.1	67,273.4	21,743.7	4,290.4
2008	211,118.4	61,111.9	19,542.3	3,856.1
2009	243,342.8	70,439.8	23,101.9	4,558.4
2010	117,234.1	33,935.4	11,228.6	2,215.6
2011	122,149.0	39,518.1	15,288.3	3,722.7
2012	90,590.3	29,308.1	11,352.9	2,764.4
2013	123,819.4	40,058.6	13,324.5	3,244.5
2014	156,283.9	50,561.6	16,361.1	3,983.9
2015	116,228.8	37,602.8	12,920.0	3,146.0
2016	156,147.0	50,517.3	17,087.7	4,160.8
2017	144,400.1	46,716.9	14,797.4	3,603.1
2018	85,420.1	27,635.5	8,563.0	2,085.1

Table 2. Time series of GAJ longline discards in weight (lb) and number with associated standard errors (SE).

Year	Estimated Discards in Weight	SE of Estimated Discards in Weight	Estimated Discards in Number	SE of Estimated Discards in Number
1993	10,897.1	2,391.1	621.1	126.4
1994	14,015.8	3,075.4	798.8	162.6
1995	15,524.1	3,406.4	884.8	180.1
1996	15,324.9	3,362.7	873.4	177.8
1997	16,899.5	3,708.2	963.2	196.1
1998	38,602.8	8,470.4	1,937.2	394.4
1999	45,883.0	10,067.9	2,253.5	458.8
2000	59,831.4	13,128.5	2,885.0	587.3
2001	27,371.2	6,005.9	1,404.3	285.9
2002	34,845.8	7,646.0	1,821.9	370.9
2003	50,062.0	10,984.8	2,618.9	533.1
2004	54,658.2	11,993.4	2,745.3	558.9
2005	55,670.9	12,215.6	2,777.0	565.3
2006	39,668.3	8,704.2	2,072.9	422.0
2007	22,859.6	5,016.0	1,259.8	256.5
2008	29,644.1	6,504.6	1,632.3	332.3
2009	23,281.4	5,108.5	1,205.6	245.4
2010	11,524.1	2,528.7	613.8	125.0
2011	18,522.9	4,402.9	784.4	137.8
2012	8,178.5	1,944.0	349.1	61.3
2013	15,160.9	3,603.7	645.9	113.4
2014	21,697.2	5,157.4	940.2	165.1
2015	24,910.0	5,921.1	1,073.5	188.5
2016	25,886.6	6,153.2	1,099.1	193.0
2017	23,059.3	5,481.2	991.3	174.1
2018	13,496.8	3,208.2	596.9	104.8

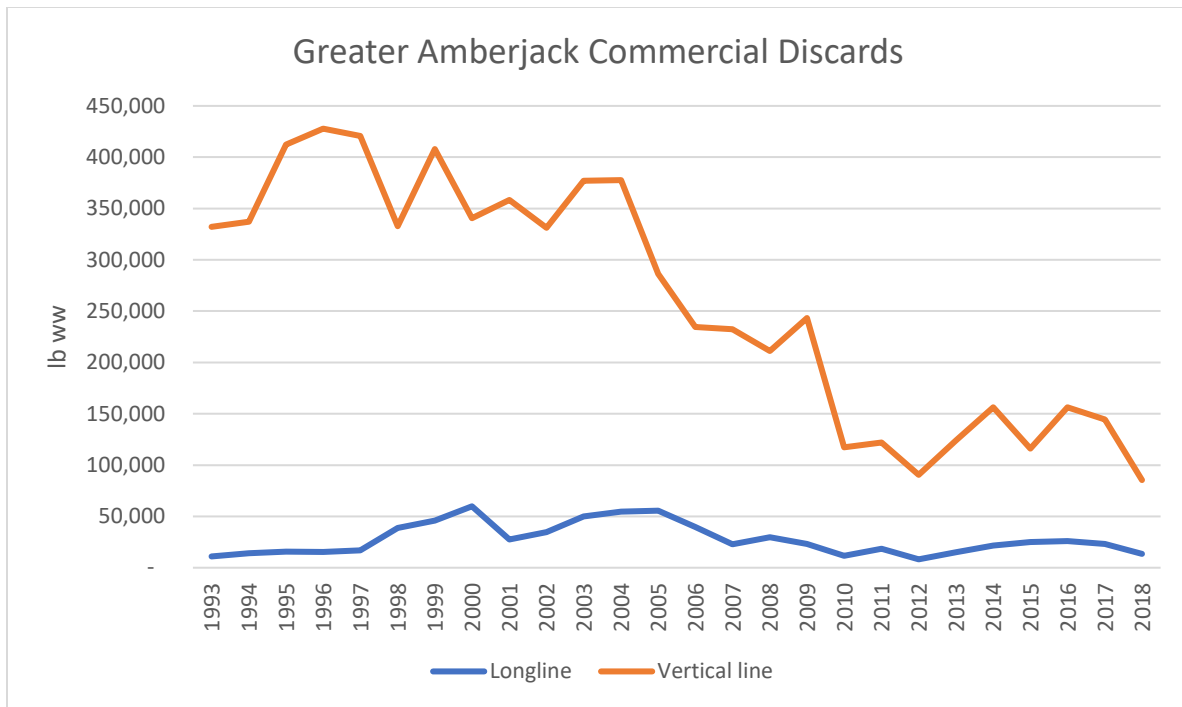


Figure 1. Annual GAJ commercial discards for the longline and vertical line fleets in pounds whole weight.

Table 3. Annual GAJ recreational discards by fishing mode. The data are in MRIP-FES and SRHS, and the units are numbers of fish.

Year	Charter	Private	Headboat
1981	11	38,119	5
1982	14,616	73,341	155
1983	26,354	135,732	421
1984	0	33,864	-
1985	22	43,565	1
1986	80,303	30,616	14,212
1987	3,295	69,484	301
1988	722	119,166	74
1989	7,690	165,006	1,850
1990	39,086	146,518	26,612
1991	301,272	47,291	6,839
1992	174,641	147,669	7,638
1993	132,512	189,161	13,173
1994	66,897	115,718	7,137
1995	6,652	112,832	3,744
1996	37,407	42,155	4,279
1997	18,843	111,222	3,006
1998	47,860	148,362	7,296
1999	62,975	160,105	5,904
2000	29,358	310,989	3,720
2001	53,698	1,439,225	8,991
2002	78,743	669,897	8,224
2003	60,221	604,539	6,910
2004	25,708	360,666	1,980
2005	20,450	522,785	2,552
2006	23,781	484,217	1,790
2007	33,803	294,674	3,369
2008	58,018	311,353	4,637
2009	57,881	209,893	5,619
2010	33,583	1,029,681	2,981
2011	46,164	643,868	3,107
2012	27,996	342,880	3,834
2013	48,927	654,413	4,665

Year	Charter	Private	Headboat
2014	82,209	340,530	5,750
2015	69,716	446,255	8,235
2016	80,406	592,754	7,500
2017	74,958	467,838	4,484
2018	39,454	265,951	3,499

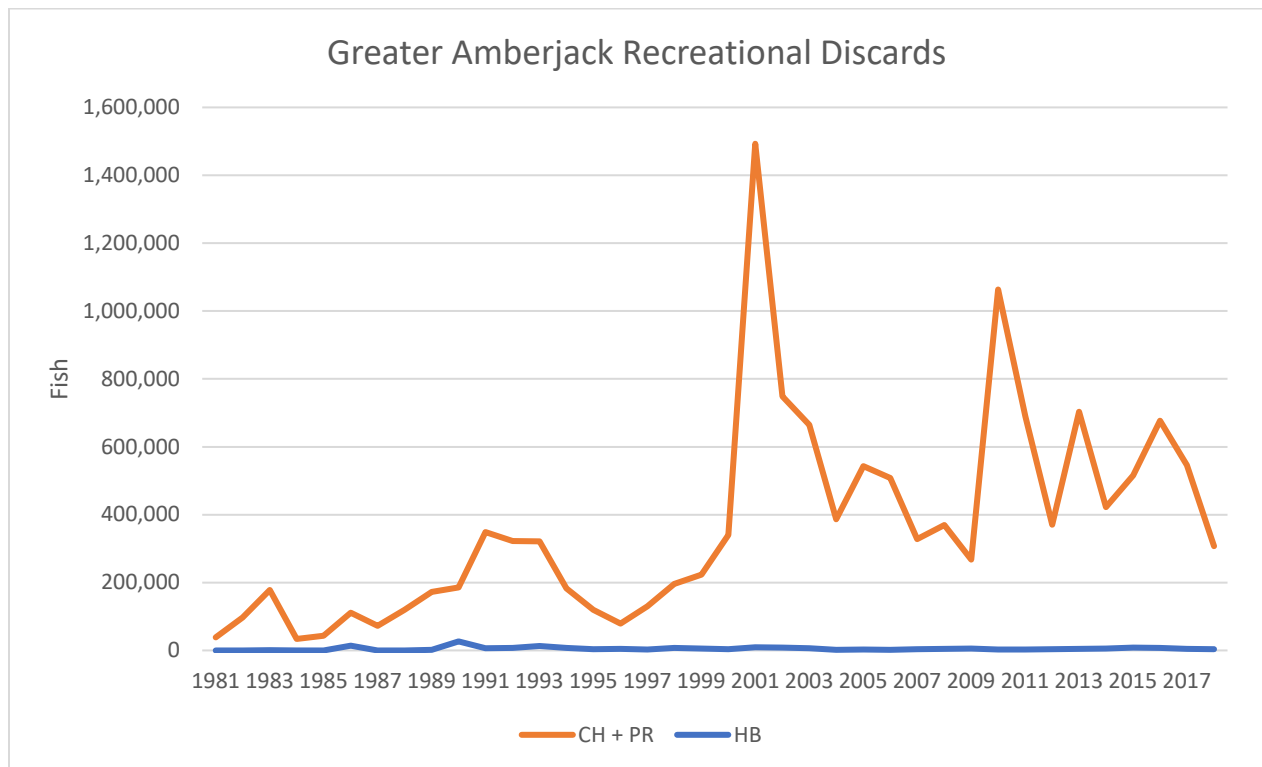


Figure 2. Annual GAJ recreational discards for the charterboat and private boat modes combined and headboat mode.

Table 4. Annual Gag discards by fleet in 1000s of fish.

<b>Year</b>	<b>Comm. Vertical line + Other</b>	<b>Comm. Longline</b>	<b>Headboat</b>	<b>Charterboat</b>	<b>Private + Shore</b>
1993	17.085	0.588	56.153	89.783	615.085
1994	16.824	0.673	9.132	14.601	449.415
1995	18.992	0.660	9.388	15.011	823.774
1996	21.238	0.809	3.887	6.215	176.365
1997	22.344	0.779	14.373	22.980	256.737
1998	33.497	0.807	7.385	91.325	796.323
1999	28.141	0.819	4.304	17.620	648.759
2000	84.101	1.304	5.814	20.296	453.159
2001	100.510	1.586	21.810	46.217	1075.490
2002	92.724	1.627	51.036	71.078	845.307
2003	79.853	1.727	1.187	3.502	2284.400
2004	85.584	1.693	7.347	86.122	1619.460
2005	79.541	1.457	12.369	97.098	3530.460
2006	46.882	1.351	35.261	113.478	3345.560
2007	34.193	0.764	43.452	308.655	4335.850
2008	32.203	0.878	13.292	240.693	2133.040
2009	37.010	0.457	12.984	168.734	3597.320
2010	34.423	4.252	54.357	351.124	4956.250
2011	28.390	4.503	48.522	233.276	4342.620
2012	10.016	2.017	30.277	134.811	2828.740
2013	9.958	2.473	30.345	201.966	5096.700
2014	10.341	3.012	24.157	246.969	5799.450
2015	8.010	3.242	43.680	296.289	6765.830
2016	9.503	3.642	52.364	337.988	8915.110
2017	7.887	3.505	36.512	339.608	5606.640
2018	6.716	3.086	9.848	140.619	3679.860
2019	20.621	6.193	35.003	113.324	5067.760

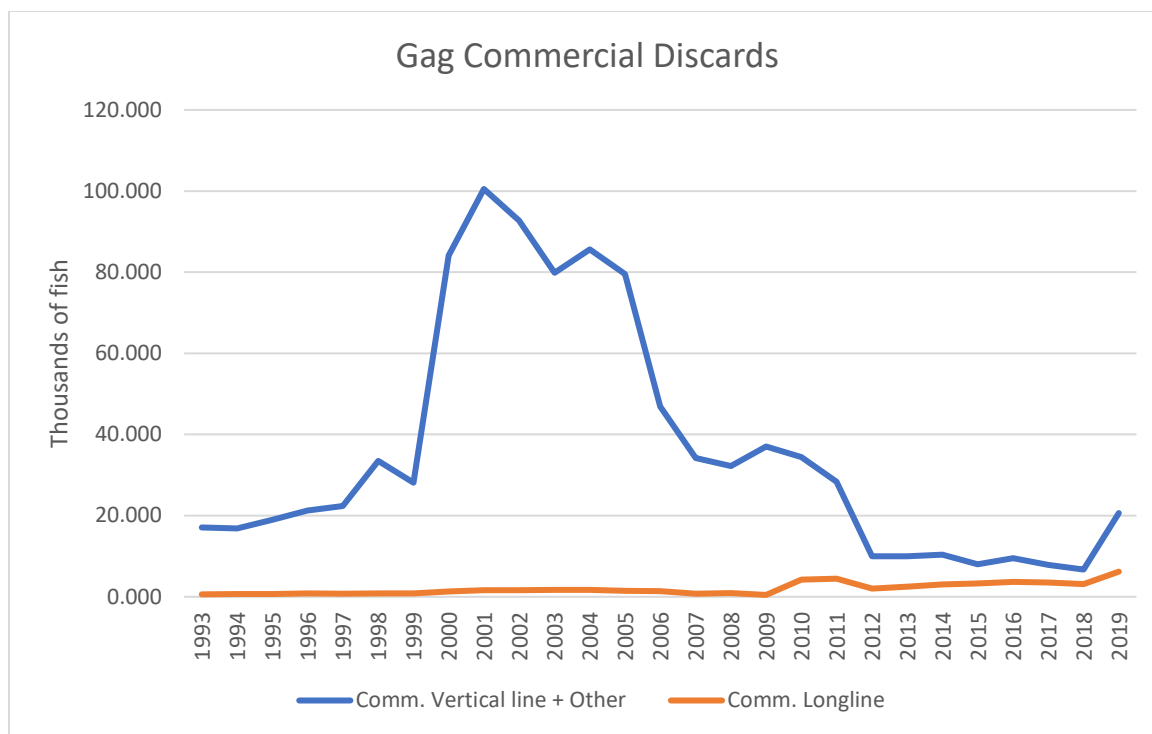


Figure 3. Annual Gag commercial discards by fleet in thousands of fish.

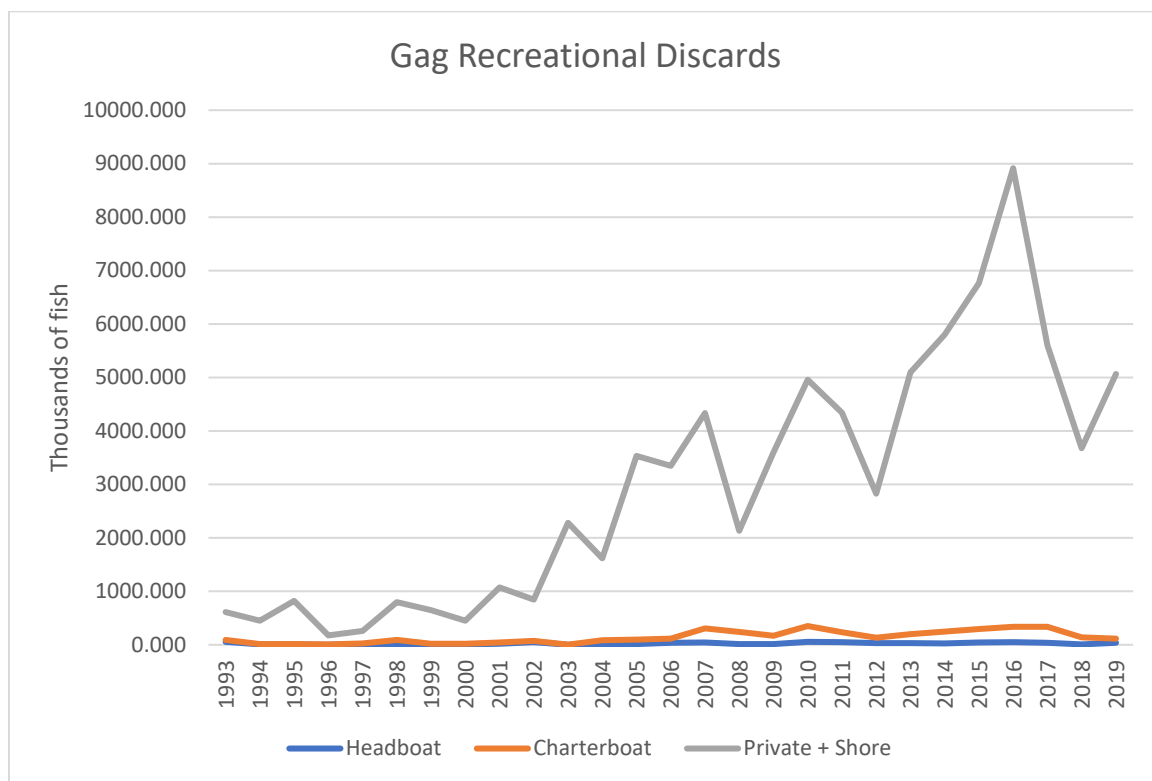


Figure 4. Annual Gag recreational discards by fleet in thousands of fish.



Table 5. Annual Red Grouper commercial and recreational discards by fleet in numbers of fish.

Year	Commercial Vertical Line	Commercial Longline	Commercial Trap	Recreational
1981				312,885
1982				167,105
1983				99,231
1984				162,951
1985				99,429
1986				946,857
1987				783,530
1988				2,082,026
1989				6,609,691
1990			69,050	4,644,419
1991			131,400	5,747,517
1992			87,500	5,428,383
1993	79,662	514,033	169,870	3,323,120
1994	94,368	668,159	53,900	3,466,599
1995	49,123	302,219	124,730	4,179,545
1996	112,944	667,938	732,740	1,525,069
1997	132,132	878,497	598,570	2,221,349
1998	127,683	718,051	50,190	3,623,913
1999	140,955	754,469	106,190	5,960,360
2000	142,683	633,778	234,980	4,797,420
2001	146,668	652,257	167,620	3,847,755
2002	151,052	579,902	146,060	4,201,116
2003	158,908	596,105	134,700	4,232,515
2004	151,788	567,853	81,900	8,097,486
2005	133,793	440,858	122,090	3,042,235
2006	146,203	506,568	139,270	2,376,307
2007	150,881	405,702		1,728,971
2008	127,661	480,530		6,752,222
2009	219,006	153,431		6,828,147
2010	198,729	177,525		5,995,822
2011	290,423	346,979		6,589,383
2012	178,703	402,936		4,974,805
2013	96,399	209,867		5,628,106
2014	59,449	324,659		4,813,049
2015	86,568	195,727		2,952,094
2016	96,899	242,272		2,565,618
2017	71,658	216,046		2,576,189

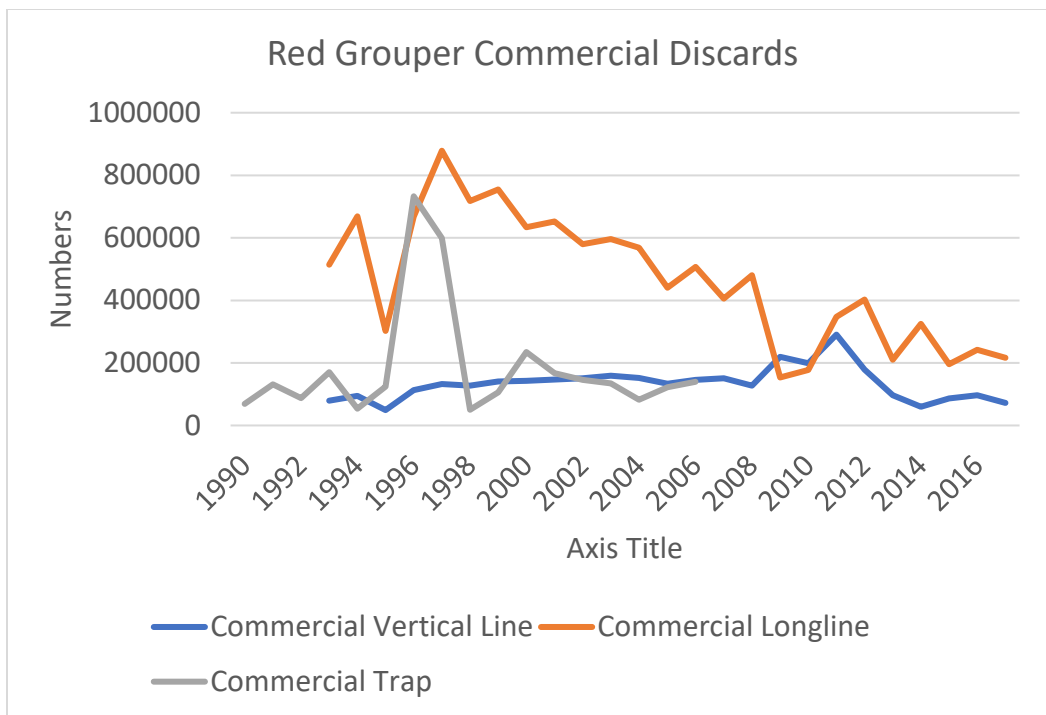


Figure 5. Annual Red Grouper commercial discards by fleet in numbers of fish.

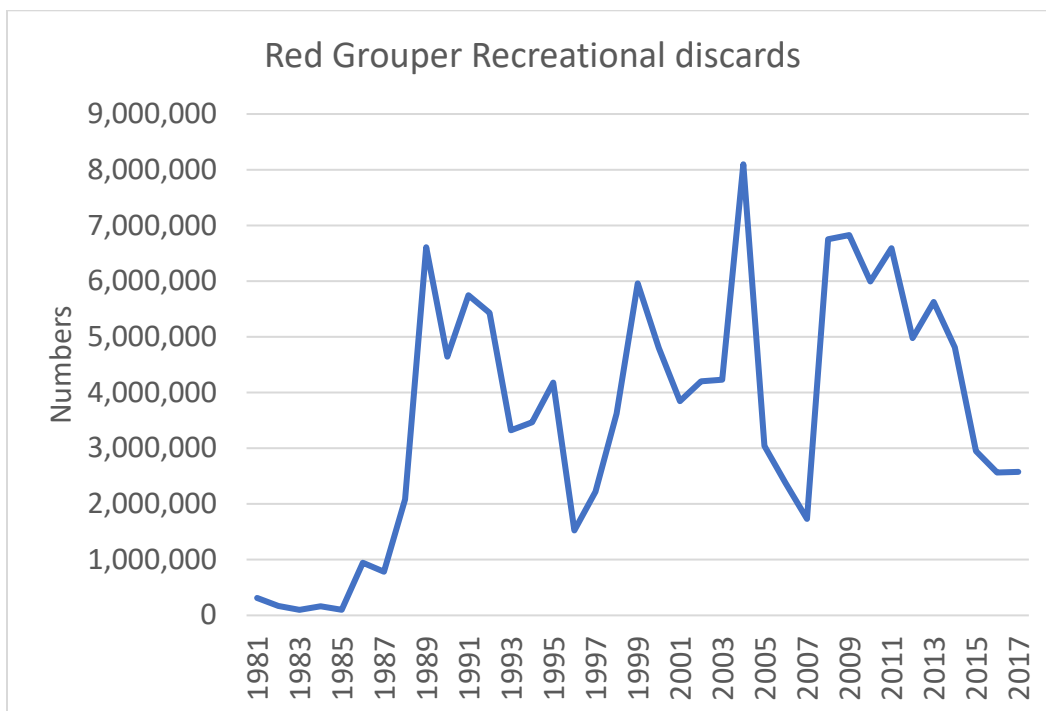


Figure 6. Annual Red Grouper recreational discards in numbers of fish.

Table 6. Annual Red Snapper commercial discards by fleet (HL is handline and LL is longline), area (W is Western, C is Central, and E is Eastern) in numbers of fish. All Red Snapper data for SEDAR 74 are preliminary at this time.

Year	HL_E	HL_C	HL_W	LL_E	LL_C	LL_W
2007	8,544.20	83,382.60	466,910.70	2,685.60	2,798.40	878.1
2008	8,597.90	49,727.80	131,928.20	3,437.30	2,915.70	1,808.00
2009	12,487.20	51,755.50	111,756.70	1,560.20	1,086.70	3,042.00
2010	18,722.70	58,449.10	92,164.90	10,051.60	1,514.60	1,089.80
2011	21,726.00	71,009.00	90,972.20	13,312.30	804	363.6
2012	21,278.90	77,763.10	103,465.70	8,534.50	205.6	858
2013	24,330.20	62,341.20	100,966.20	14,301.90	310.1	2,955.30
2014	24,697.60	66,196.70	27,537.30	17,922.60	1,242.00	1,843.80
2015	22,529.50	66,713.10	33,730.10	26,676.80	3,906.70	5,293.10
2016	29,145.70	72,065.30	31,152.60	26,989.20	1,832.70	3,057.00
2017	28,137.70	74,403.50	30,065.20	27,870.10	705.6	3,194.60
2018	25,139.30	62,429.10	25,896.70	27,553.10	3,389.60	1,175.10
2019	24,532.20	63,248.40	27,484.40	33,807.30	2,201.30	3,163.00

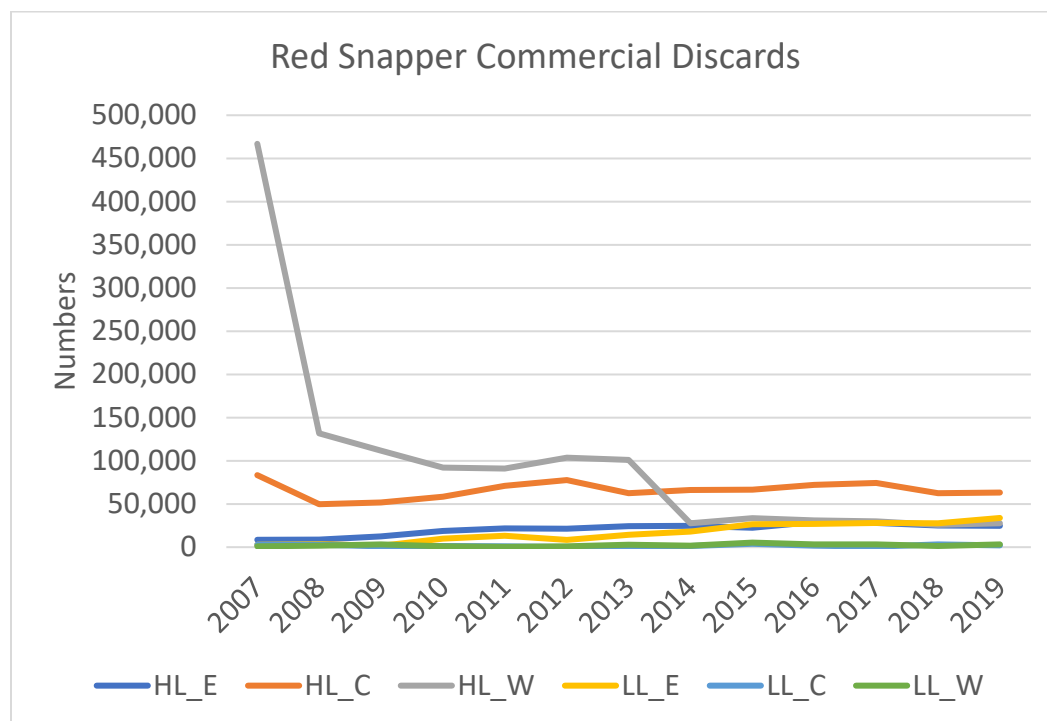


Figure 7. Annual Red Snapper commercial discards by fleet (HL is handline and LL is longline) and area (W is Western, C is Central, and E is Eastern) in numbers of fish. All Red Snapper data for SEDAR 74 are preliminary at this time.

Table 7. Annual Red Snapper recreational discards by fleet (Cbt is charterboat mode, Priv is private boat mode, and HBT is headboat) and area (W is Western, C is Central, and E is Eastern) in numbers of fish. All Red Snapper data for SEDAR 74 are preliminary at this time.

Year	MRIP_Cbt_C	MRIP_Cbt_W	MRIP_Priv_E	MRIP_Priv_C	MRIP_Priv_W	HBT_E	HBT_C	HBT_W
1981	487.99	1.80	76,356.73	179,403.40	63,442.87	--	--	--
1982	7,736.25	13,298.76	0.00	13,168.77	6,490.68	--	--	--
1983	0.00	1,526.49	0.00	4,470.02	695.34	--	--	--
1984	3,784.10	7.33	82,405.05	0.00	43,560.53	--	--	--
1985	2,285.28	26.86	41,324.28	924.55	204,990.00	--	--	--
1986	7,324.52	2,565.82	11,687.62	13,528.23	38,582.50	119	137	2,854
1987	42,598.06	1,802.35	3,103.34	113,798.50	120,037.70	60	549	2,431
1988	64,905.97	1,213.10	35,687.17	9,132.69	529,273.30	-	1,485	9,278
1989	35,092.08	4,603.87	7,021.85	323,027.70	371,122.30	-	1,135	7,356
1990	80,687.26	64,073.81	21,540.34	772,204.60	422,257.70	-	5,508	114,389
1991	196,019.30	140,526.10	78,277.02	1,587,532.00	410,624.90	-	10,101	87,510
1992	317,611.80	111,920.00	80,073.09	1,315,577.00	450,630.10	5	19,402	102,003
1993	260,032.90	67,205.94	29,725.78	1,657,182.00	528,829.30	-	7,273	102,382
1994	273,364.30	107,784.20	38,863.92	940,421.50	1,213,187.00	66	13,405	254,274
1995	401,692.90	89,024.69	13,967.46	226,084.10	1,942,650.00	-	19,777	116,361
1996	486,469.30	90,821.79	35,811.09	1,014,854.00	413,057.80	-	20,721	150,719
1997	833,405.60	61,019.04	25,990.35	2,024,065.00	482,627.20	4	48,054	85,010
1998	588,804.60	47,397.63	12,660.45	831,317.50	739,975.40	34	37,799	30,061
1999	715,192.60	12,321.85	26,439.86	2,312,350.00	2,006,895.00	1,889	55,915	6,075
2000	369,340.40	8,454.21	66,168.58	1,316,588.00	547,257.30	236	48,138	14,753
2001	472,442.30	15,101.10	5,729.34	1,673,859.00	458,869.40	503	46,240	24,748
2002	465,099.80	36,577.95	6,873.99	3,289,216.00	723,429.40	-	47,613	26,039
2003	498,264.20	55,881.38	2,069.03	2,425,089.00	1,413,722.00	253	48,924	45,140
2004	531,107.00	177,149.00	25,301.00	3,415,206.00	2,967,127.00	672	45,552	65,341
2005	484,189.80	166,529.70	92,921.50	2,388,489.00	1,880,349.00	1,359	39,288	72,082
2006	651,504.50	188,839.70	30,938.32	2,892,932.00	2,060,152.00	537	61,514	70,060
2007	581,523.40	121,512.30	43,270.47	4,146,943.00	916,910.00	591	57,591	58,531
2008	166,667.10	39,651.34	4,081.00	929,749.70	1,193,048.00	3,919	94,052	41,534
2009	213,608.20	13,874.98	51,470.65	1,497,497.00	795,670.40	5,841	94,201	30,974
2010	55,901.36	20,182.23	24,247.02	1,024,479.00	721,046.40	1,530	52,800	18,411
2011	99,759.30	4,564.47	8,013.55	881,732.90	900,650.40	6,295	82,104	23,092
2012	65,409.20	7,697.35	3,687.31	684,465.60	459,849.50	2,099	71,576	15,908
2013	77,989.14	11,481.20	994,431.80	1,641,116.00	297,267.50	1,575	80,013	9,849
2014	12,227.65	3,611.80	530,841.20	453,373.70	13,251.27	1,820	59,827	8,567
2015	63,243.79	8,448.73	515,941.30	577,296.80	31,543.62	1,489	53,346	9,714
2016	116,903.70	6,601.16	91,219.11	963,621.90	21,110.99	11,350	81,816	9,782
2017	184,247.80	4,597.16	320,399.50	2,727,022.00	61,761.14	15,268	115,406	10,278
2018	128,463.60	2,991.47	380,821.00	1,052,638.00	123,726.70	14,257	95,229	9,502
2019	158,788.20	15,856.12	844,184.10	1,186,893.00	61,010.43	12,680	77,428	11,312

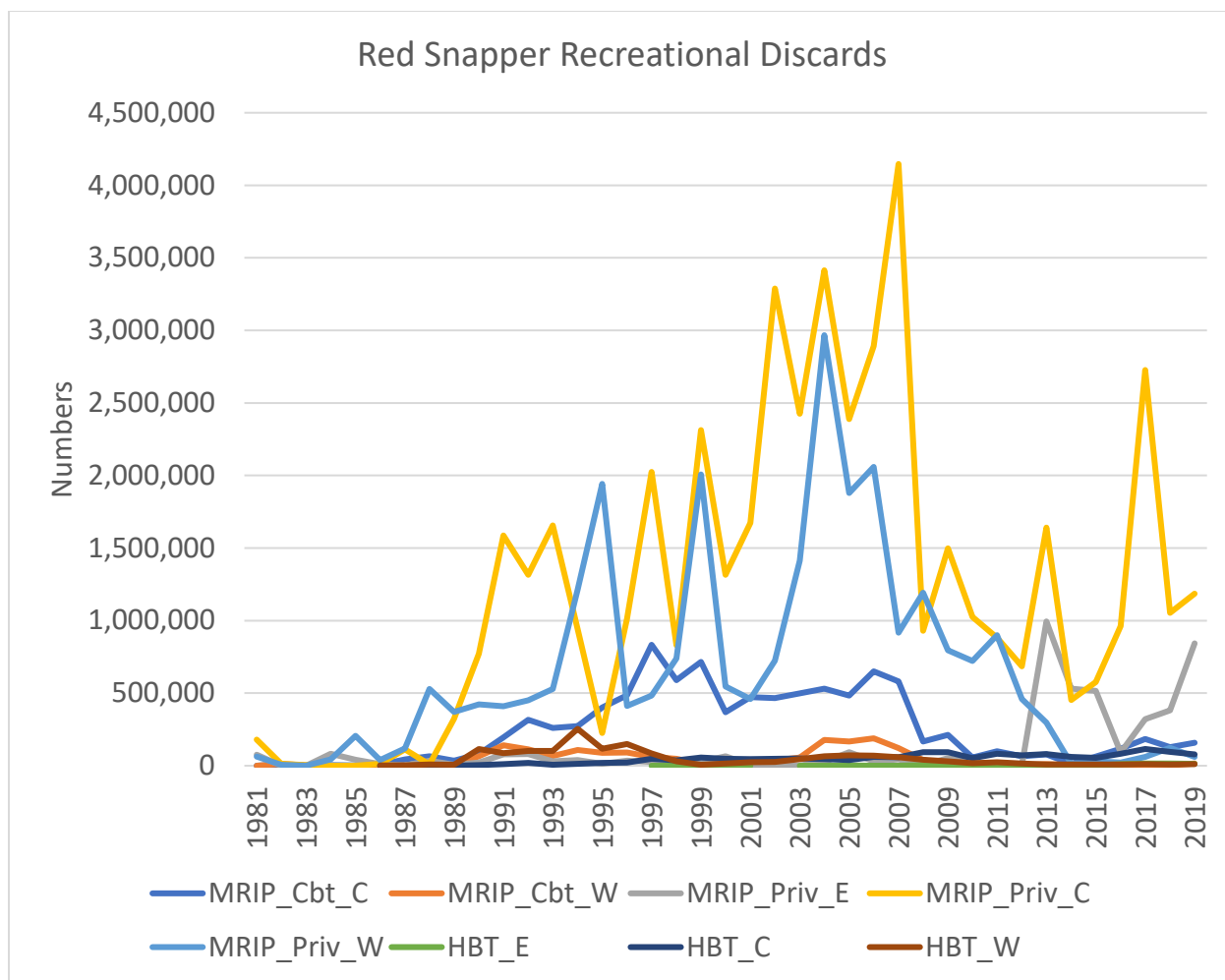


Figure 8. Annual Red Snapper recreational discards by fleet (Cbt is charterboat mode, Priv is private boat mode, and HBT is headboat) area (W is Western, C is Central, and E is Eastern) in numbers of fish. All Red Snapper data for SEDAR 74 are preliminary at this time.

Table 8. Annual Red Snapper closed season recreational discards by fleet (Cbt is charterboat mode, Priv is private boat mode, and HBT is headboat) and area (W is Western, C is Central, and E is Eastern) in numbers of fish. All Red Snapper data for SEDAR 74 are preliminary at this time.

Year	R_Cbt_Clsd_E	R_Cbt_Clsd_C	R_Cbt_Clsd_W	R_Priv_Clsd_E	R_Priv_Clsd_C	R_Priv_Clsd_W
1997	311.30	14,866.02	396.47	0.00	243,966.80	5,802.86
1998	183.70	88,148.98	624.98	52,944.61	281,524.00	51,692.86
1999	0.00	143,259.20	555.44	23,419.04	371,640.40	30,495.83
2000	88.58	135,403.20	1,533.18	1,555.67	1,245,758.00	178,706.90
2001	2,682.27	99,096.32	0.00	0.00	2,698,898.00	55,734.95
2002	0.00	90,024.81	1,141.07	0.00	3,136,651.00	64,181.70
2003	2,578.37	75,087.86	3,541.28	2,919.82	1,924,069.00	338,459.80
2004	692.95	82,524.20	1,380.49	67,293.03	1,089,849.00	219,802.00
2005	1,043.96	87,762.84	30,358.83	36,258.16	1,639,565.00	144,177.30
2006	9,691.12	151,696.80	13,495.51	24,378.12	1,280,177.00	180,231.10
2007	2,001.32	103,570.10	4,107.46	0.00	1,549,033.00	153,301.60
2008	13,722.73	319,821.50	28,545.11	36,400.05	3,426,382.00	414,570.50
2009	12,778.56	262,248.00	19,249.40	51,364.28	2,339,131.00	329,753.80
2010	2,243.35	170,751.30	2,653.58	105,220.80	3,401,432.00	331,822.80
2011	1,947.59	276,186.00	2,820.70	1,492,565.00	2,847,783.00	434,583.90
2012	719.96	193,049.20	11,462.54	10,601.02	3,286,846.00	230,126.30
2013	6,314.56	324,961.30	16,226.08	7,787.72	3,230,274.00	545,272.20
2014	7,949.82	269,320.10	3,364.06	42,881.32	3,411,620.00	87,796.67
2015	9,621.40	195,166.00	9,332.24	22,735.99	2,580,466.00	206,912.30
2016	36,881.26	299,904.70	6,453.41	672,267.50	4,518,973.00	42,419.85
2017	145,530.50	353,694.40	5,323.77	0.00	5,539,613.00	198,965.70
2018	43,095.44	293,567.10	3,952.50	0.00	3,972,806.00	523,312.80
2019	15,550.22	338,369.30	18,104.13	0.00	4,577,792.00	334,141.40

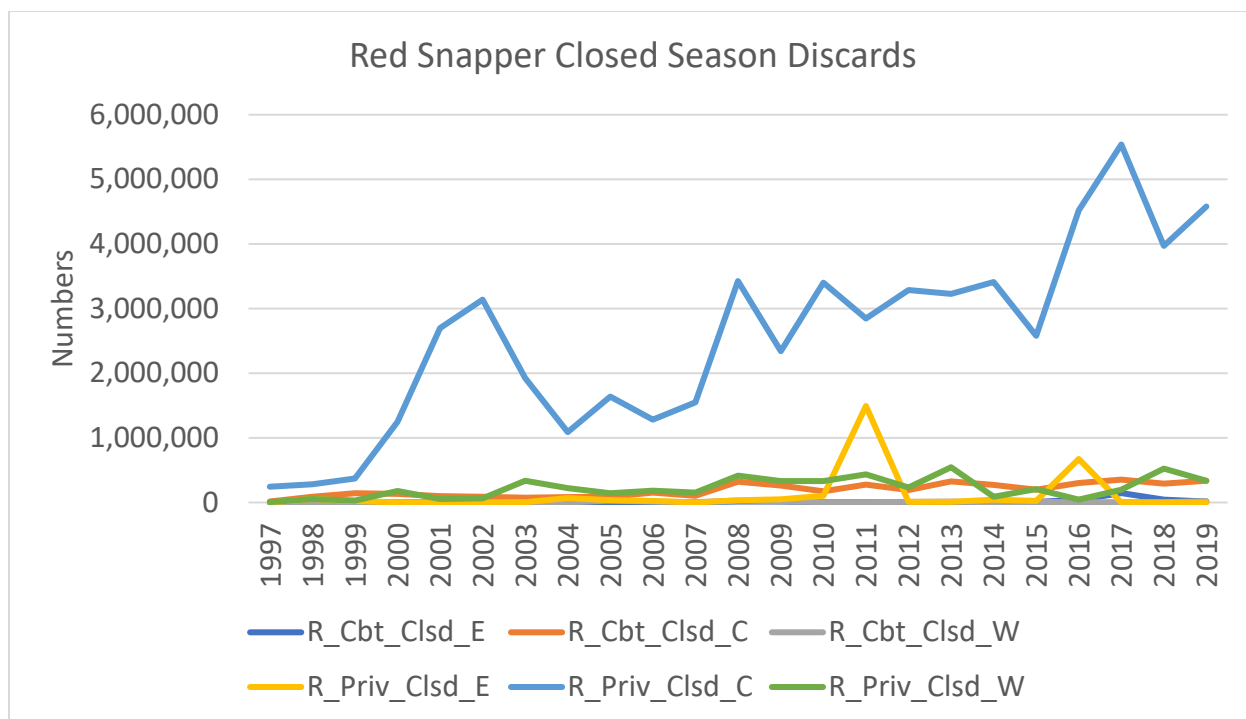


Figure 9. Annual Red Snapper closed season recreational discards by fleet (Cbt is charterboat mode, Priv is private boat mode, and HBT is headboat) and area (W is Western, C is Central, and E is Eastern) in numbers of fish. All Red Snapper data for SEDAR 74 are preliminary at this time.