Gag Trip Limit

Alternative 1 (No Action). Quota is 352,940 lbs gw. Seasonal closure occurs during January-April. There is no trip limit.

Alternative 2. Establish a 1,000 lb gw (1,180 lb ww).

Sub-Alternative 2a. Establish a 1,000 lb gw (1,180 lb ww) trip limit and reduce to 100 lbs gw (118 lbs ww) when 75% of the quota is met.

Alternative 3. Establish a 750 lb gw (885 lb ww) trip limit.

Sub-Alternative 3a. Establish a 750 lb gw (885 lb ww) trip limit and reduce to 100 lbs gw (118 lbs ww) when 75% of the quota is met.

Alternative 4. Establish a 500 lb gw (590 lb ww) trip limit.

Alternative 5. Establish a 250 lb gw (295 lb ww) trip limit.

Alternative 6. Establish a 100 lb gw (118 lb ww) trip limit.

Alternative 7. Apply Alternatives 2-6 to red grouper, black grouper, and gag.

Biological Effects

No Action **Alternative 1** would retain the measures established through Amendment 16, which became effective on July 19, 2009. The measures include a 352,940 lbs gutted weight (416,469 lbs whole weight) quota and a January-April spawning season closure. The quota was not met in 2009. Table 1 shows the 352,940 lb gutted weight quota would have been met in 2006 and 2007. Estimated 2009 landings under the various trip limit alternatives is presented in Table 2.

Table 1. Landings (pounds gutted weight) of gag during May-December 2006 to 2009.

Year	ww	gw
2006	403,188	341,684
2007	490,588	415,753
2008	356,680	302,271
2009	357,428	302,905

The effect of a trip limit was determined by setting the maximum landings to an actual trip in the NMFS logbook. For example, if the trip limit was 500 lbs gutted weight, then all trips that had landings in excess of 500 lbs were changed to have landings equal to that catch level.

Although the gag landings did not exceed the quota during 2009, it is possible effort could increase during 2010 due to closures for vermilion snapper and black sea bass. Table 3 shows the effect of proposed trips limits in **Alternatives 2 through 6** on gag landings during May-December 2007.

Table 2. Expected cumulative landings of gag during May-December 2009 for various trip limit alternatives.

Month	Alt 1	Alt 2 1,000	Alt 3 750	Alt 4 500	Alt 5 250	Alt 6 100
5	34,009	34,014	33,809	32,459	30,822	17,338
6	77,680	77,065	75,542	70,726	61,644	37,425
7	110,769	108,669	105,769	98,848	84,615	51,758
8	145,796	142,881	138,537	129,522	110,129	67,290
9	184,899	181,706	176,761	165,353	138,255	83,925
10	228,237	225,043	219,836	206,526	171,217	102,730
11	264,760	261,455	255,389	239,842	196,823	117,280
12	302,905	298,270	290,734	271,551	219,942	129,388

Table 3. Expected cumulative landings of gag during May-December 2007 for various trip limit alternatives.

Month	Alt 1	Alt 2 1,000	Alt 3 750	Alt 4 500	Alt 5 250	Alt 6 100	Alt 2a 1,000 to 100	Alt 3a 750 to 100
5	74,653	64,330	57,889	47,811	43,955	18,219	64,330	57,889
6	159,990	140,646	128,546	109,000	87,910	43,370	140,646	128,546
7	210,544	187,406	172,614	148,231	119,024	61,631	187,406	172,614
8	253,901	229,898	212,997	184,772	148,523	80,230	229,898	212,997
9	280,097	255,809	238,532	209,275	169,405	93,275	255,809	238,532
10	311,799	284,241	265,336	233,940	189,853	105,962	282,630	265,336
11	352,959	322,566	302,097	267,753	217,381	122,752	299,419	282,126
12	415,753	380,706	356,598	317,353	255,907	144,952	321,619	304,326
quota met	30-Nov	14-Dec	31-Dec					
75% met	17-Sep	15-Oct	29-Oct					

If future landings were similar to those in 2007, a 1,000 lb gutted weight pound trip limit (**Alternative 2**) would not keep the season open all year (Table 3). However, if the 1,000 lb gutted weight trip limit was reduced to 100 lbs gutted weight (**Alternative 2a**) when 75% of the quota was met, the quota would come within 30,000 lbs of being met. Under **Alternative 3** (750 lb gutted weight), the gag fishery would be expected to remain open until the end of December. The quota would not be met under the remaining alternatives. A 15% reduction in gag harvest during May-December 2007 (352,940/415,753) to keep the fishery open all season. Table 6 also shows the required trip limit to keep the 2007 trip limit open all year would be between 678 and 763lbs gutted weight.

The biological effects of the alternatives would be least for status quo **Alternative 1**. **Alternative 6** could be expected to have the greatest biological effect if all harvest of gag was stopped when the trip limit was met. However, the chance of incidental catch and discard of gag increases with decreasing trip limits. Furthermore, an increased number of trips could also occur with various trip limits.

Alternative 7 would apply the trip limits identified in **Alternatives 2 through 6** to gag, red grouper, and black grouper combined, which have a proposed quota of 662,403 lbs gutted weight

in Amendment 17B. Examination of May-December landings from 2006 to 2009 reveals that the 662,403 lbs gutted weight quota would not have been met during 2006 and 2009 but would have been met during 2007 and 2008 (Table 4).

Table 4. Landings (pounds) of gag, red grouper, and black grouper during May-December 2006 to 2009.

Year	ww	Gw
2006	778,997	660,167
2007	1,088,167	922,175
2008	881,583	747,104
2009	684,446	580,039

Table 5 shows that a 500 lb gutted weight trip limit for gag, black grouper, and red grouper quota would keep the fishery open all season based on landings during 2007. Approximately a 28% reduction (662,403/922,175) in harvest would be needed during May-December 2007 to keep the fishery open all year. The required trip limit to keep the fishery open all year is shown to be between 424 and 508 lbs gutted weight in Table 7.

Table 5. Expected cumulative landings of gag, red grouper, and black grouper during May-December 2007 for various trip limit alternatives and date 662,403 lb gw quota would be expected to be met.

Month	Alt 1	Alt 2 1,000	Alt 3 750	Alt 4 500	Alt 5 250	Alt 6 100	Alt 2a 1,000 to 100	Alt 3a 750 to 100
5	151,865	138,836	129,298	112,892	102,236	48,123	138,836	129,298
6	326,806	302,048	284,214	251,992	204,471	106,549	302,048	284,214
7	443,645	415,015	392,835	350,233	280,692	150,756	415,015	392,835
8	565,554	534,114	507,662	454,135	360,838	198,297	512,646	504,777
9	631,803	599,880	572,375	515,708	411,711	230,069	544,418	536,549
10	716,155	677,125	645,581	581,234	462,153	260,580	574,929	567,060
11	804,026	761,680	726,615	654,720	520,411	296,164	610,514	602,645
12	922,175	874,303	833,728	751,423	593,998	339,522	653,872	646,003
quota met	14-Sep	24-Oct	6-Nov	2-Dec				

The dates specified in Tables 3 and 5 do not consider some trips would be shortened by the trip limit and fishermen might increase the number of trips to compensate for a lower trip limit. It might be expected that decrease in the trip limit, there might be an increase in the number of trips. However, fuel costs and distance traveled to fishing grounds would also be a factor in whether or not a fishermen would increase the number of trips. With small trip limits, the cost of fuel moving to and from the fishing grounds could limit profit to the extent that the trip would not be taken. Table 3 and 5 provides some indication of the percentage of trips greater than the proposed trip limits. For example, less than 4% of the trips in Tables 6 and 7 for gag or gag, red grouper, and black grouper combined were greater than 1,000 lbs gutted weight; therefore, an small increase in the trips would be expected if this trip limit were established. Furthermore, less than 10% of the trips had catches greater than 500 lbs gutted weight so a greater number of increased trips would be expected but it would not be substantial.

Table 6. Number of trips, % trips, pounds over trips and % reduction in harvest for trip limit for gag.

Trip Limit	May-June 2007				May-June 2009			
	# Trips	% Trips	Pounds over trip	% Reduct	# Trips	% Trips	Pounds over trip	% Reduct
0	2,078	100.00%	415,753	100.00%	1,897	100.00%	302,905	100.00%
85	1,111	53.46%	286,903	69.01%	964	50.82%	187,561	61.92%
97	1,025	49.33%	273,400	65.76%	885	46.65%	175,763	58.03%
127	831	39.99%	246,021	59.17%	740	39.01%	151,706	50.08%
148	734	35.32%	229,459	55.19%	658	34.69%	136,995	45.23%
169	651	31.33%	214,804	51.67%	594	31.31%	123,743	40.85%
212	531	25.55%	189,801	45.65%	468	24.67%	101,261	33.43%
254	437	21.03%	169,449	40.76%	367	19.35%	83,705	27.63%
424	234	11.26%	115,080	27.68%	164	8.65%	41,907	13.84%
508	193	9.29%	96,734	23.27%	115	6.06%	30,376	10.03%
593	170	8.18%	81,263	19.55%	84	4.43%	22,172	7.32%
678	138	6.64%	68,308	16.43%	64	3.37%	16,071	5.31%
763	114	5.49%	57,704	13.88%	45	2.37%	11,618	3.84%
847	98	4.72%	48,693	11.71%	33	1.74%	8,456	2.79%
932	88	4.23%	40,803	9.81%	23	1.21%	5,970	1.97%
1,017	83	3.99%	33,662	8.10%	16	0.84%	4,379	1.45%
1,102	74	3.56%	27,089	6.52%	11	0.58%	3,209	1.06%
1,186	62	2.98%	21,366	5.14%	9	0.47%	2,373	0.78%
1,271	50	2.41%	16,610	4.00%	5	0.26%	1,784	0.59%
1,356	41	1.97%	12,815	3.08%	3	0.16%	1,462	0.48%
1,441	32	1.54%	9,825	2.36%	3	0.16%	1,208	0.40%
1,525	25	1.20%	7,515	1.81%	2	0.11%	992	0.33%
1,610	22	1.06%	5,519	1.33%	2	0.11%	823	0.27%
1,695	12	0.58%	3,996	0.96%	2	0.11%	653	0.22%
1,907	9	0.43%	2,004	0.48%	1	0.05%	326	0.11%
2,119	3	0.14%	706	0.17%	1	0.05%	114	0.04%
2,331	2	0.10%	191	0.05%	0	0.00%	0	0.00%
2,542	0	0.00%	0	0.00%	0	0.00%	0	0.00%
2,754	0	0.00%	0	0.00%	0	0.00%	0	0.00%
2,966	0	0.00%	0	0.00%	0	0.00%	0	0.00%
3,178	0	0.00%	0	0.00%	0	0.00%	0	0.00%
3,390	0	0.00%	0	0.00%	0	0.00%	0	0.00%
3,602	0	0.00%	0	0.00%	0	0.00%	0	0.00%
3,814	0	0.00%	0	0.00%	0	0.00%	0	0.00%
4,025	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Table 7. Number of trips, % trips, pounds over trips and % reduction in harvest for trip limit for gag, black grouper and red grouper.

Trip Limit	May-June 2007				May-June 2009			
	# Trips	% Trips	Pounds over trip	% Reduct	# Trips	% Trips	Pounds over trip	% Reduct
0	5,395	100.00%	922,175	100.00%	4,126	100.00%	580,039	100.00%
85	2,496	46.27%	618,957	67.12%	1,824	44.21%	351,522	60.60%
97	2,308	42.78%	588,521	63.82%	1,662	40.28%	329,251	56.76%
127	1,918	35.55%	525,971	57.04%	1,394	33.79%	284,001	48.96%
148	1,718	31.84%	487,523	52.87%	1,242	30.10%	256,131	44.16%
169	1,554	28.80%	452,952	49.12%	1,118	27.10%	231,198	39.86%
212	1,275	23.63%	393,121	42.63%	875	21.21%	189,110	32.60%
254	1,083	20.07%	343,470	37.25%	686	16.63%	156,310	26.95%
424	566	10.49%	209,391	22.71%	296	7.17%	79,215	13.66%
508	436	8.08%	167,017	18.11%	201	4.87%	58,493	10.08%
593	361	6.69%	133,503	14.48%	149	3.61%	43,929	7.57%
678	278	5.15%	106,551	11.55%	113	2.74%	33,005	5.69%
763	214	3.97%	85,731	9.30%	81	1.96%	25,118	4.33%
847	170	3.15%	69,537	7.54%	61	1.48%	19,195	3.31%
932	136	2.52%	56,645	6.14%	42	1.02%	14,849	2.56%
1,017	119	2.21%	45,880	4.98%	30	0.73%	11,885	2.05%
1,102	104	1.93%	36,575	3.97%	22	0.53%	9,709	1.67%
1,186	89	1.65%	28,495	3.09%	17	0.41%	8,128	1.40%
1,271	66	1.22%	21,910	2.38%	12	0.29%	6,888	1.19%
1,356	53	0.98%	16,829	1.82%	8	0.19%	6,041	1.04%
1,441	43	0.80%	12,835	1.39%	6	0.15%	5,443	0.94%
1,525	33	0.61%	9,743	1.06%	5	0.12%	4,973	0.86%
1,610	28	0.52%	7,161	0.78%	5	0.12%	4,549	0.78%
1,695	17	0.32%	5,204	0.56%	5	0.12%	4,125	0.71%
1,907	12	0.22%	2,321	0.25%	3	0.07%	3,275	0.56%
2,119	4	0.07%	720	0.08%	3	0.07%	2,639	0.45%
2,331	2	0.04%	191	0.02%	2	0.05%	2,101	0.36%
2,542	0	0.00%	0	0.00%	2	0.05%	1,677	0.29%
2,754	0	0.00%	0	0.00%	2	0.05%	1,254	0.22%
2,966	0	0.00%	0	0.00%	2	0.05%	830	0.14%
3,178	0	0.00%	0	0.00%	2	0.05%	406	0.07%
3,390	0	0.00%	0	0.00%	1	0.02%	22	0.00%
3,602	0	0.00%	0	0.00%	0	0.00%	0	0.00%
3,814	0	0.00%	0	0.00%	0	0.00%	0	0.00%
4,025	0	0.00%	0	0.00%	0	0.00%	0	0.00%