Black Sea Bass Trip Limit

Alternative 1 (No Action). Quota is 309,000 lbs gutted weight. There is no trip limit.

Alternative 2. Establish a trip limit for the black sea bass fishery (all gear)

Alternative 2a. Establish a 500 lb gw (590 lb ww) trip limit.
Alternative 2b. Establish a 750 lb gw (885 lb ww) trip limit.
Alternative 2c. Establish a 1,000 lb gw (1,180 lb ww) trip limit.
Alternative 2d. Establish a 1,250 lb gw (1,475 lb ww) trip limit.
Alternative 2e. Establish a 1,000 lb gw (1,180 lb ww) trip limit; reduce to 500 lbs gutted weight (590 lb ww) when 75% of the quota is met.
Alternative 2f. Establish a 2,000 lb gw (2,360 lb ww) trip limit.
Alternative 2g. Establish a trip limit that will keep the fishery open all year (340 lbs gw).

Alternative 3. Establish separate trip limits for the pot and other fisheries (hook and line, spear).

Alternative 3a. Establish a 500 lb gw (590 lb ww) trip limit for pot fishery and a 50 lb gw (59 lb ww) trip limit for other fisheries.
Alternative 3b. Establish a 750 lb gw (885 lb ww) trip limit for pot fishery and a 75 lb gw (89 lb ww) trip limit for other fisheries.
Alternative 3c. Establish a 1,000 lb gw (1,180 lb ww) trip limit for pot fishery and a 100 lb gw (118 lb ww) trip limit for other fisheries.
Alternative 3d. Establish a trip limit for the pot (340 lb gw) and other fisheries (17 lb gw) that will keep the fishery open all year.

Alternative 4. Establish a split season for black sea bass.

Alternative 4a. Separate quotas for June-November and December-May based on historical proportions of landings.
Alternative 4b. Separate quotas for June-December and January-May based on historical proportions of landings.
Alternative 4c. Carry over unused portion from first part of fishing year to second portion of season.
Alternative 4d. Carry over unused portion from second part of fishing year to next fishing year.

Alternative 5. Close the pot fishery when 90% of the commercial quota is met.

Alternative 6. Establish a spawning season closure for black sea bass.

<u>Biological Effects</u>
Amendment 13C (implemented in October 2006), reduced the black sea bass quota over three years from 477,000 lbs gutted weight (June 2006-May 2007) to 309,000 lbs gutted weight (June 2008-May 2009) and reduced the quota for golden tilefish. Amendment 16 (implemented in July 2009) established a January-April spawning season closure for shallow water grouper and reduced the quota for vermilion snapper, and likely resulted in increased effort in the black sea bass fishery during the 2009 fishing year.

As a result of Amendments 13C and 16, the black sea bass 309,000 lb gutted weight quota was met on December 20, 2009, for the June 2008-May 2009 fishing year. No Action **Alternative 1** would not implement any regulations to slow down the rate at which the quota is being met for black sea bass. The increase in landings during the June 2009 to May 2010 fishing year appears to be the result in increased effort. The average catch per pot was similar during 2008 and 2009 (Table 1). However, the number of trips that fished pots was 1.6 times greater in the June 2009 to May 2010 fishing year than during the previous fishing year (Table 2). There was also an increase in the number of trips that caught black sea bass with other gear types (predominantly hook and line).

Table 1. Average catch per trip (lbs gutted weight) and percentage of landings from pots during fishing years (June – May) for 2006-2009. Other category is 99% hook and line gear. NMFS logbook data.

Year	all gear	Pots	other	% pot landings
2006	214	554	31	90.62%
2007	165	501	25	89.15%
2008	198	621	28	89.81%
2009	188	643	31	87.83%

Table 2. Number of trips by gear for black sea bass taken during June-December 2008 and 2009. Other category is 99% hook and line gear. NMFS logbook data.

	2008			2009		
Month	all gear	pots	other	all gear	pots	other
6	197	17	180	274	46	228
7	198	24	174	229	37	192
8	179	22	157	244	47	197
9	88	11	77	241	74	167
10	138	34	104	200	65	135
11	194	58	136	210	73	137
12	172	71	101	108	47	61
Total	1,166	237	929	1,506	389	1,117
Percent inc				29.16%	64.14%	20.24%

Alternatives 2 and 3 would consider a range in trip limits to reduce the rate at which the black sea bass quota is met. Most of these trip limits alternatives were suggested by different black sea bass pot fishermen. **Alternative 2** would consider a single trip limit for black sea bass harvested with pot and hook and line; whereas, **Alternative 3** would specify separate trip limits for the pot and hook and line fisheries. Black sea bass are predominately taken with pots (Table 1). While the average catch per pot is much greater with pot gear than hook and line, they are encountered more frequently on hook and line trips (Table 2).

To determine trip limits for black sea bass under **Alternatives 2 and 3**, it was necessary to account for the increased effort that occurred in 2009. As the black sea bass fishery closed on December 20, 2009, landings were estimated for January-June 2010. This was done by using

trip information from the NMFS logbook during January-June 2008 and increasing the number of trips by 64% for the pot fishery, and by 20% for the remaining gear (predominantly hook and line) during that time period.

Based on estimated data for the June 2009-May 2010 fishing year, a 500 lb gutted weight trip limit (**Alternative 2a**) would keep the fishery open through February 2010 and almost two months longer than the No Action **Alternative 1**. Trip limits of 750 to 1,250 lbs gutted weight would result in January closures (**Alternatives 2b-2d**), and **Alternative 2e**, which would reduce a 1,000 lb gutted weight trip limit to 500 lbs gutted weight when 75% of the quota is met would have a similar effect as **Alternative 2a**. The similarities among the alternatives is likely due to an average catch that is lower than the specified trip limits in **Alternatives 2b-2e**. Therefore, many trips are not constrained by the trip limit.

Table 3. Projected date of black sea bass commercial closure various trip limits. Shaded area represents date the 309,000 lb gutted weight quota was actually met. Values in parentheses represent expected landings at end of fishing year if quota not met.

Fishing Year	**Alternative 1** No trip limit.	**Alternative 2a** 500 lb trip limit.	**Alternative 2b** 750 lb trip limit.	**Alternative 2c** 1,000 lb trip limit.	**Alternative 2d** 1,250 lb trip limit.	**Alternative 2e** 1,000 lb trip limit reduce to 500 lb trip limit when 75% quota met.
June 2006-May 2007	12-Feb	29-May	16-Mar	28-Feb	25-Feb	15-Mar
June 2007-May 2008	23-May	Not met (226,947)	Not met (273,051)	Not met (295,228)	Not met (307,587)	Not met (280,303)
June 2008-May 2009	25-Feb	Not met (249,126)	Not met (305,768)	23-Mar	7-Mar	30-Apr
June 2009-May 2010	20-Dec	9-Feb	19-Jan	6-Jan	5-Jan	28-Jan

Alternative 2f would establish a 2,000 lb gutted weight (2,360 lb whole weight) trip limit. Tables 5 and 6 reveal that less than 1% of trips with all gear types and about 1% of pot trips had catches at or greater than this trip level. Therefore, under **Alternative 2f** the expected quota closure dates would be almost identical to the No Action **Alternative 1** and would have little effect of extending the black sea bass fishery.

Alternative 2g would specify a trip limit that would allow the black sea bass fishery to remain open throughout the June-May fishing year. In the absence of a closure, it is estimated that the increased effort would have resulted in landings of 660,126 lbs gutted weight during the June 2009 to May 2010 fishing year. An approximate trip limit of 340 lbs gutted weight would be needed to keep the 2009 fishing year open (Table 4). Amendment 18 is under development and includes proposed actions to limit the number of pots that can be fished and the requirement that fishermen return pots to shore at the conclusion of a trip. There is a possibility that fishermen could exceed the trip limit when retrieving pots and fishermen would have to empty the catch from the pots. Tables 5 and 6 shows that only 14% of the trips, with all gear combined or just pots, exceeded at trip level of 508 lbs gutted weight. In contrast, only 4 to 5% of pot trips had

catches greater than 1,000 lbs gutted weight (Table 6). Although release mortality of black sea bass from pots is considered to be low, some mortality would be expected if fishermen were to release fish from pots after a trip limit is met.

Table 4. Reduction in total catch and approximate trip limit needed to keep fishery open all year based on data from black sea bass Jun-May fishing years for 2006-2009.

Year	Reduction	Trip limit
2008	6%	1,271
2009*	53%	340

*Data for 2009 are estimated after closure assuming similar increase in effort during June – December 2009.

Table 5. Trip limit, number of trips, amount of pounds (gutted weight), and percent reduction in harvest provided by a trip limit during June 2008 - May 2009 and June 2009 – May 2010 fishing years. Includes all gear. Data for 2009 are incomplete.

Trip Limit	2008				2009			
	# Trips	% Trips	Pounds over trip	% Reduct	# Trips	% Trips	Pounds over trip	% Reduct
0	1,959	100.00%	387,048	100.00%	1,517	100.00%	335,834	100.00%
17	1,100	56.15%	363,009	93.79%	793	52.27%	314,215	93.56%
34	859	43.85%	346,628	89.56%	625	41.20%	300,249	89.40%
51	748	38.18%	333,080	86.06%	528	34.81%	288,829	86.00%
68	684	34.92%	320,980	82.93%	485	31.97%	278,709	82.99%
85	623	31.80%	309,887	80.06%	459	30.26%	269,294	80.19%
97	597	30.47%	302,160	78.07%	439	28.94%	262,555	78.18%
127	537	27.41%	285,408	73.74%	414	27.29%	247,651	73.74%
148	517	26.39%	274,282	70.87%	398	26.24%	237,542	70.73%
169	488	24.91%	263,609	68.11%	388	25.58%	227,670	67.79%
212	464	23.69%	243,499	62.91%	365	24.06%	208,825	62.18%
254	431	22.00%	224,546	58.01%	349	23.01%	190,955	56.86%
339	368	18.79%	190,567	49.24%	299	19.71%	158,548	47.21%
424	327	16.69%	161,034	41.61%	248	16.35%	131,145	39.05%
508	273	13.94%	135,555	35.02%	208	13.71%	108,339	32.26%
593	238	12.15%	113,971	29.45%	173	11.40%	89,101	26.53%
678	209	10.67%	94,916	24.52%	143	9.43%	73,300	21.83%
763	172	8.78%	79,055	20.43%	113	7.45%	60,423	17.99%
847	141	7.20%	65,870	17.02%	97	6.39%	49,829	14.84%
932	121	6.18%	54,757	14.15%	80	5.27%	40,779	12.14%
1,017	105	5.36%	45,127	11.66%	62	4.09%	33,667	10.02%
1,102	89	4.54%	36,829	9.52%	56	3.69%	27,755	8.26%
1,186	73	3.73%	29,879	7.72%	45	2.97%	22,706	6.76%
1,271	59	3.01%	24,194	6.25%	38	2.50%	18,527	5.52%
1,356	52	2.65%	19,531	5.05%	30	1.98%	15,142	4.51%
1,441	46	2.35%	15,391	3.98%	22	1.45%	12,552	3.74%
1,525	36	1.84%	11,789	3.05%	17	1.12%	10,614	3.16%
1,610	29	1.48%	8,978	2.32%	16	1.05%	8,949	2.66%
1,695	22	1.12%	6,862	1.77%	14	0.92%	7,421	2.21%
1,907	14	0.71%	3,169	0.82%	7	0.46%	4,781	1.42%
2,119	5	0.26%	1,168	0.30%	6	0.40%	3,032	0.90%
2,331	2	0.10%	671	0.17%	4	0.26%	1,820	0.54%
2,542	1	0.05%	411	0.11%	4	0.26%	820	0.24%
2,754	1	0.05%	199	0.05%	1	0.07%	302	0.09%
2,966	0	0.00%	0	0.00%	1	0.07%	52	0.02%

Table 6. Trip limit, number of trips, amount of pounds (gutted weight), and percent reduction in harvest provided by a trip limit during June 2008 - May 2009 and June 2009 – May 2010 fishing years. Includes pot gear. Data for 2009 are incomplete.

Trip Limit	2008				2009			
	# Trips	% Trips	Pounds over trip	% Reduct	# Trips	% Trips	Pounds over trip	% Reduct
0	560	28.59%	347,593	100.00%	389	25.64%	294,955	100.00%
17	553	28.23%	338,150	97.28%	388	25.58%	287,190	97.37%
34	548	27.97%	328,806	94.60%	388	25.58%	279,430	94.74%
51	538	27.46%	319,595	91.95%	385	25.38%	271,698	92.12%
68	532	27.16%	310,532	89.34%	381	25.12%	264,027	89.51%
85	514	26.24%	301,634	86.78%	378	24.92%	256,442	86.94%
97	506	25.83%	295,137	84.91%	376	24.79%	250,775	85.02%
127	481	24.55%	280,433	80.68%	373	24.59%	237,678	80.58%
148	473	24.14%	270,305	77.76%	365	24.06%	228,463	77.46%
169	460	23.48%	260,404	74.92%	361	23.80%	219,383	74.38%
212	444	22.66%	241,309	69.42%	346	22.81%	201,690	68.38%
254	419	21.39%	223,004	64.16%	331	21.82%	184,756	62.64%
339	363	18.53%	189,690	54.57%	287	18.92%	153,748	52.13%
424	324	16.54%	160,525	46.18%	239	15.75%	127,359	43.18%
508	271	13.83%	135,267	38.92%	202	13.32%	105,265	35.69%
593	236	12.05%	113,852	32.75%	168	11.07%	86,584	29.36%
678	209	10.67%	94,916	27.31%	140	9.23%	71,140	24.12%
763	172	8.78%	79,055	22.74%	110	7.25%	58,563	19.85%
847	141	7.20%	65,870	18.95%	94	6.20%	48,269	16.36%
932	121	6.18%	54,757	15.75%	77	5.08%	39,519	13.40%
1,017	105	5.36%	45,127	12.98%	59	3.89%	32,707	11.09%
1,102	89	4.54%	36,829	10.60%	53	3.49%	27,095	9.19%
1,186	73	3.73%	29,879	8.60%	43	2.83%	22,321	7.57%
1,271	59	3.01%	24,194	6.96%	36	2.37%	18,342	6.22%
1,356	52	2.65%	19,531	5.62%	29	1.91%	15,070	5.11%
1,441	46	2.35%	15,391	4.43%	22	1.45%	12,552	4.26%
1,525	36	1.84%	11,789	3.39%	17	1.12%	10,614	3.60%
1,610	29	1.48%	8,978	2.58%	16	1.05%	8,949	3.03%
1,695	22	1.12%	6,862	1.97%	14	0.92%	7,421	2.52%
1,907	14	0.71%	3,169	0.91%	7	0.46%	4,781	1.62%
2,119	5	0.26%	1,168	0.34%	6	0.40%	3,032	1.03%
2,331	2	0.10%	671	0.19%	4	0.26%	1,820	0.62%
2,542	1	0.05%	411	0.12%	4	0.26%	820	0.28%
2,754	1	0.05%	199	0.06%	1	0.07%	302	0.10%

Alternative 3 would specify separate trip limits for the pot and hook and line fisheries. Black sea bass are predominately taken with pots (Table 1). While the average catch per pot is much greater with pot gear than hook and line, they are encountered more frequently on hook and line trips (Table 2). Therefore, **Alternative 3** would account for this large discrepancy in the average catch between gear types by establishing separate trip limits for pots and other gear types.

Table 7. Projected date of black sea bass commercial closure various trip limits. Shaded area represents date the 309,000 lb gutted weight quota was actually met. Values in parentheses represent expected landings at end of fishing year if quota not met.

Fishing Year	**Alternative 1** No trip limit.	**Alternative 3a** 500 lb pot limit and 50 lb other limit.	**Alternative 3b** 750 lb pot limit and 75 lb other limit.	**Alternative 3c** 1,000 lb pot limit and 100 lb other limit.
June 2006-May 2007	12-Feb	Not met (349,771)	21-Mar	2-Mar
June 2007-May 2008	23-May	Not met (216,251)	Not met (263,495)	Not met (287,419)
June 2008-May 2009	25-Feb	Not met (235,799)	Not met (298,968)	1-Apr
June 2009-May 2010	20-Dec	23-Feb	29-Jan	19-Jan

Since hook and line gear make up a small percentage of the overall black sea bass landings, having a separate trip limit for the hook and line fishery results in minor differences on when the quota would met under **Alternatives 3a – 3c** compared to similar trip limits under **Alternative 2**.

Alternative 3d would establish a separate trip limits for the pot and hook and black sea bass fisheries that would be expected to keep the fishery throughout the fishing year. Since hook and line landings are small (Table 9), very small trip limits would be attributed to that portion of the fishery. The trip limits for pots under **Alternative 3d** are extremely similar to the trip limits required when all gear are included (Table 8).

Table 8. Reduction in total catch and approximate trip limit needed to keep fishery open all year based on data from black sea bass Jun-May fishing years for 2006-2009.

Year	Reduction	Pot limit	Other limit
2008	6%	1,271	212
2009*	53%	340	34

Table 9. Trip limit, number of trips, amount of pounds (gutted weight), and percent reduction in harvest provided by a trip limit during June 2008 - May 2009 and June 2009 – May 2010 fishing years. Includes hook and line gear. Data for 2009 are incomplete.

Trip Limit	2008				2009			
	# Trips	% Trips	Pounds over trip	% Reduct	# Trips	% Trips	Pounds over trip	% Reduct
0	1,399	71.41%	39,455	100.00%	1,128	74.36%	40,879	100.00%
17	547	27.92%	24,859	63.01%	405	26.70%	27,026	66.11%
34	311	15.88%	17,821	45.17%	237	15.62%	20,820	50.93%
51	210	10.72%	13,484	34.18%	143	9.43%	17,131	41.91%
68	152	7.76%	10,448	26.48%	104	6.86%	14,682	35.92%
85	109	5.56%	8,253	20.92%	81	5.34%	12,852	31.44%
97	91	4.65%	7,023	17.80%	63	4.15%	11,780	28.82%
127	56	2.86%	4,975	12.61%	41	2.70%	9,973	24.40%
148	44	2.25%	3,977	10.08%	33	2.18%	9,079	22.21%
169	28	1.43%	3,205	8.12%	27	1.78%	8,287	20.27%
212	20	1.02%	2,190	5.55%	19	1.25%	7,135	17.45%
254	12	0.61%	1,542	3.91%	18	1.19%	6,199	15.16%
339	5	0.26%	877	2.22%	12	0.79%	4,799	11.74%
424	3	0.15%	508	1.29%	9	0.59%	3,786	9.26%
508	2	0.10%	288	0.73%	6	0.40%	3,074	7.52%
593	2	0.10%	119	0.30%	5	0.33%	2,517	6.16%
678	0	0.00%	0	0.00%	3	0.20%	2,160	5.28%
763	0	0.00%	0	0.00%	3	0.20%	1,860	4.55%
847	0	0.00%	0	0.00%	3	0.20%	1,560	3.82%
932	0	0.00%	0	0.00%	3	0.20%	1,260	3.08%
1,017	0	0.00%	0	0.00%	3	0.20%	960	2.35%
1,102	0	0.00%	0	0.00%	3	0.20%	660	1.61%
1,186	0	0.00%	0	0.00%	2	0.13%	385	0.94%
1,271	0	0.00%	0	0.00%	2	0.13%	185	0.45%
1,356	0	0.00%	0	0.00%	1	0.07%	72	0.18%

Alternative 4 would split the fishing season for black sea bass and based on historical proportions of landings. While **Alternative 4** would not establish a trip limit, it would enable the fishing to continue during the winter months when landings and catch per unit effort have been greatest for black sea bass. **Alternative 4a** would split the fishing year into two six month periods with landings higher during December-May than June-November for the years considered (Table 10). Under this scenario, the second portion of the fishing season would begin in December when fish houses usually shut for Christmas and there can be a severe price drop (Tom Burgess, pers.com.). Under **Alternative 4b**, the first portion of the fishing season would extend through the month of December with the second half beginning in January. **Alternative 4b** would divide the quota more evenly among the two time periods and could be better economically for fishermen.

Table 10. Quota for split seasons based on proportion of average landings during fishing years for 2006-2009 and overall quota of 309,000 lbs gutted weight.

	Alternative 4a		Alternative 4b	
	June-Nov	Dec-May	June-Dec	Jan-May
Avg 07-08	76,513	232,487	118,011	190,989
Avg 08-09	86,217	222,783	116,631	192,369

The biological effects of **Alternatives 4a and 4b** would be very similar. Neither alternative would set a trip limit so there would not be the problem of fishermen unexpectedly exceeding the trip limit and having to release black sea bass from pots, which would be expected to result in some discard mortality. Furthermore, given the current level of fishing pressure, the quotas during both fishing seasons would be expected to met early during each fishing season. This would result in periods of time of no fishing for black sea bass with pots, which would have a positive biological effects for black sea bass as well as protected species that have the potential of becoming entangled in pot lines. Furthermore, an early closure during the second half of the fishing season would protect black sea bass when they are in spawning condition. McGovern *et al.* (2002) indicated black sea bass females are in spawning condition during March-July, with a peak during March through May. **Alternatives 4c and 4d** would allow for any unused portion of a quota to be harvested during the next portion of a fishing season. Any reduction of harvest would have increased biological effects and would enhance rebuilding of black sea bass. Therefore, the benefits of **Alternatives 4c and 4d** would be economic in nature.

Alternative 5 would close the pot fishery when 90% of the commercial quota is met and allow other gear types to be used until the quota is met. Historically, approximately 90% of the black sea bass harvest has been taken with pots. Landings on trips where hook and line gear is used is very small (Table 1). Fishermen are able to target black sea bass with pots; however, black sea bass are more likely incidental catch when fishermen use hook and line gear to target co-occurring species. Therefore, **Alternative 5** would be expected to reduce bycatch mortality of black sea bass to some degree by allowing a small harvest of black sea bass after the majority of the quota has been harvested with pot gear.

Alternative 6 would establish a March-May spawning season closure for black sea bass. Black sea bass remain in schools throughout the year and do not form aggregations at specific times of the year to spawn. However, protecting black sea bass during peak spawning times would be expected to have positive biological benefits by increasing the reproductive success of the species and potentially enhancing rebuilding time. However, if **Alternative 5** were selected as a preferred alternative, it is very possible the quota could be met by March.