

## Capacity Reduction Alternative 3 Overview

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“**Alternative 3:** Threshold for determining what must be retired. If less than 25% of a permit holder’s reported gross revenue between 1996 and 2001 was derived from trips made on groundfish Days-at-Sea, or if less than 15 category ‘A’ Days-at-Sea are allocated to that permit, only the permit holder’s groundfish permit must be surrendered. If more than 25% of their reported gross revenues were derived from trips made on groundfish Days-at-Sea, all federal and state fishing permits must be surrendered.”

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### *Potential impacts:*

As we discussed in the “Methods” document, Alternative 3 was simulated using both bid estimation models—the Permit-only Buyback model for Below the Threshold (BTI) and the Vessels for Sale model for Above the Threshold (ATI). In addition to total capacity removed, we tracked the following metrics:

- (1) Number of groundfish permits and percent-of-total retired
- (2) Number of allocated A-DAS and percent-of-total retired<sup>1</sup>
- (3) Number of active A-DAS and percent-of-total retired<sup>1</sup>
- (4) Number of latent A-DAS and percent-of-total retired<sup>1</sup>
- (5) Number of leasee A-DAS and percent-of-total retired<sup>1</sup>
- (6) Pounds of groundfish history and percent-of-total retired<sup>2</sup>
- (7) Number of loligo moratorium permits retained (Alt1 and Alt3-BTI) or retired (Alt2 and Alt3-ATI)
- (8) Number of illex moratorium permits retained (Alt1 and Alt3-BTI) or retired (Alt2 and Alt3-ATI)
- (9) Number of monkfish category C moratorium permits retained (Alt1 and Alt3-BTI) or retired (Alt2 and Alt3-ATI)
- (10) Number of monkfish category D moratorium permits retained (Alt1 and Alt3-BTI) or retired (Alt2 and Alt3-ATI)

The results are included in the following tables and figures.

Figure 1 – Results of Alternative 3 simulation with varying numbers of bids submitted and \$100 million dollars allocated

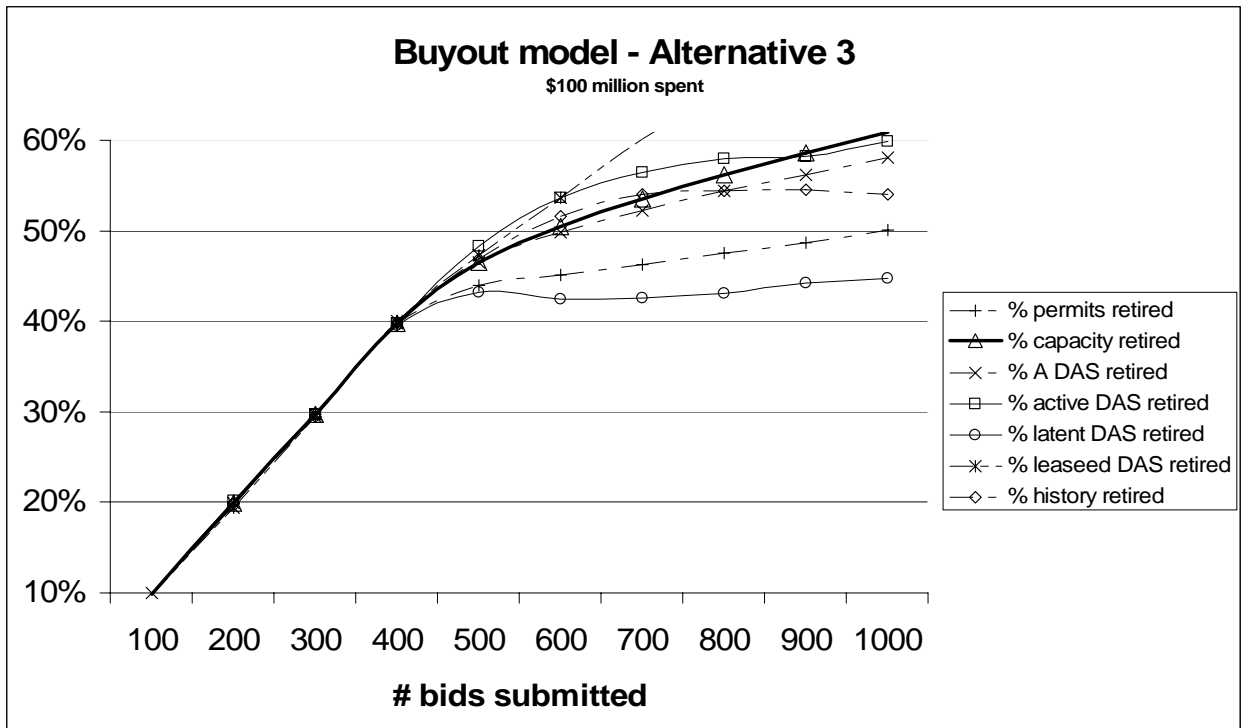


Figure 2 - Results of Alternative 3 simulation with varying numbers of bids submitted and \$80 million dollars allocated

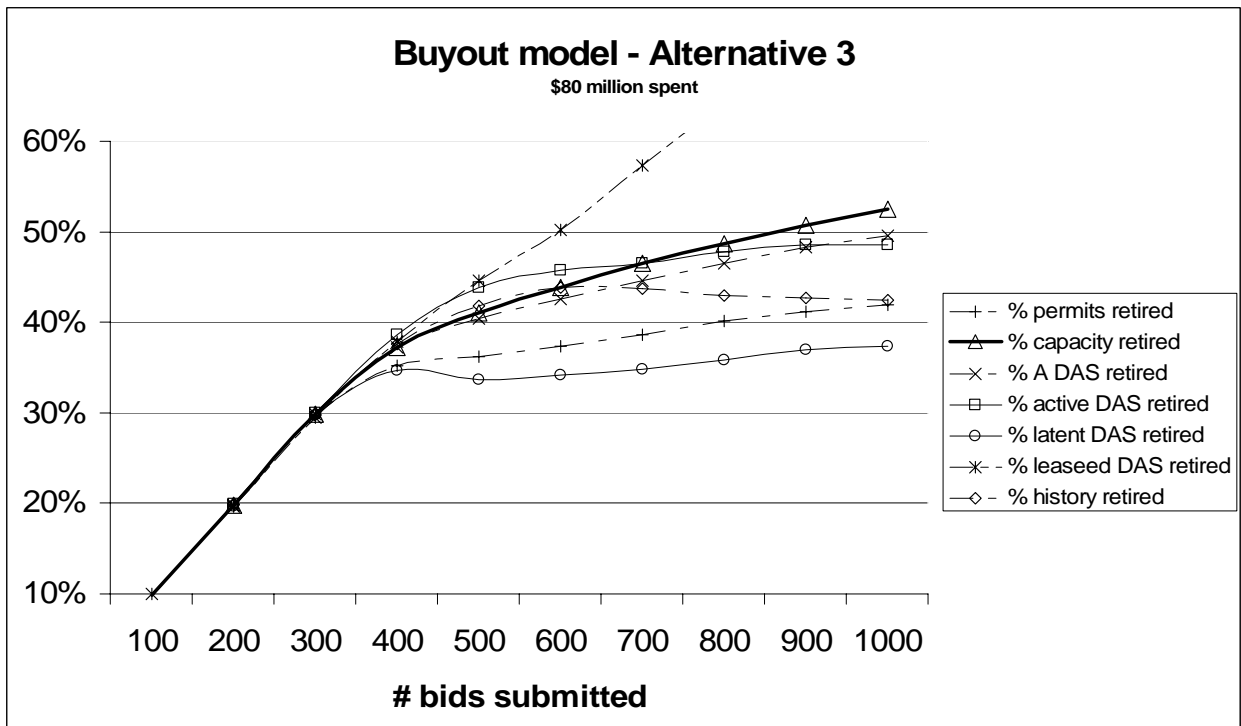


Table 1 - Results of Alternative 3 simulation with varying numbers of bids submitted and \$100 million dollars allocated

# bids placed	# permits retired	# permits retired - groundfish only	# permits retired - all federal	# capacity retired (capacity units)	# A DAS retired	# active DAS retired	# latent DAS retired	# leasee DAS retired	# history retired (lbs groundfish)	# loligo permits retained	# loligo permits retired	# illex permits retained	# illex permits retired	
100	100	42	58	13,711,205	4,359	3,177	1,890	-730	22,368,485	12	15	2	1	
200	200	83	117	27,647,814	8,727	6,440	3,771	-1,447	45,166,085	25	30	5	3	
300	300	126	174	41,196,706	13,046	9,531	5,694	-2,194	66,902,863	36	44	8	4	
400	400	166	234	55,191,119	17,451	12,730	7,550	-2,985	90,439,755	48	60	11	5	
500	443	192	251	64,501,991	20,407	15,449	8,271	-3,523	106,416,839	53	60	12	5	
600	454	210	245	70,031,042	21,873	17,180	8,113	-4,003	117,010,156	56	57	13	5	
700	467	230	237	74,165,993	22,936	18,056	8,150	-4,486	122,482,566	61	53	13	5	
800	479	251	228	77,858,029	23,859	18,553	8,248	-4,916	123,212,591	67	52	14	4	
900	491	273	217	81,283,829	24,670	18,627	8,452	-5,461	123,493,193	72	47	15	3	
1000	504	295	209	84,416,948	25,504	19,177	8,549	-5,955	122,420,586	78	47	16	3	
<b>FLEET TOTALS:</b>				<b>1008</b>	<b>138,633,560</b>	<b>43,864</b>	<b>32,015</b>	<b>19,134</b>	<b>-7,459</b>	<b>226,698,252</b>	<b>274</b>	<b>274</b>	<b>41</b>	<b>41</b>
# bids placed	% permits retired		% capacity retired	% A DAS retired	% active DAS retired	% latent DAS retired	% leasee DAS retired	% history retired	# monk C permits retained	# monk C permits retired	# monk D permits retained	# monk D permits retired		
100	9.9%		9.9%	9.9%	9.9%	9.9%	9.8%	9.9%	6	12	11	19		
200	19.8%		19.9%	19.9%	20.1%	19.7%	19.4%	19.9%	13	24	21	39		
300	29.8%		29.7%	29.7%	29.8%	29.8%	29.4%	29.5%	19	37	31	57		
400	39.7%		39.8%	39.8%	39.8%	39.5%	40.0%	39.9%	25	50	41	78		
500	44.0%		46.5%	46.5%	48.3%	43.2%	47.2%	46.9%	29	55	49	91		
600	45.1%		50.5%	49.9%	53.7%	42.4%	53.7%	51.6%	33	62	53	104		
700	46.3%		53.5%	52.3%	56.4%	42.6%	60.1%	54.0%	37	66	59	107		
800	47.5%		56.2%	54.4%	58.0%	43.1%	65.9%	54.4%	42	71	64	104		
900	48.7%		58.6%	56.2%	58.2%	44.2%	73.2%	54.5%	47	75	71	101		
1000	50.0%		60.9%	58.1%	59.9%	44.7%	79.8%	54.0%	52	73	78	99		
									<b>187</b>	<b>187</b>	<b>298</b>	<b>298</b>		

Table 2 - Results of Alternative 2 simulation with varying numbers of bids submitted and \$80 million dollars allocated

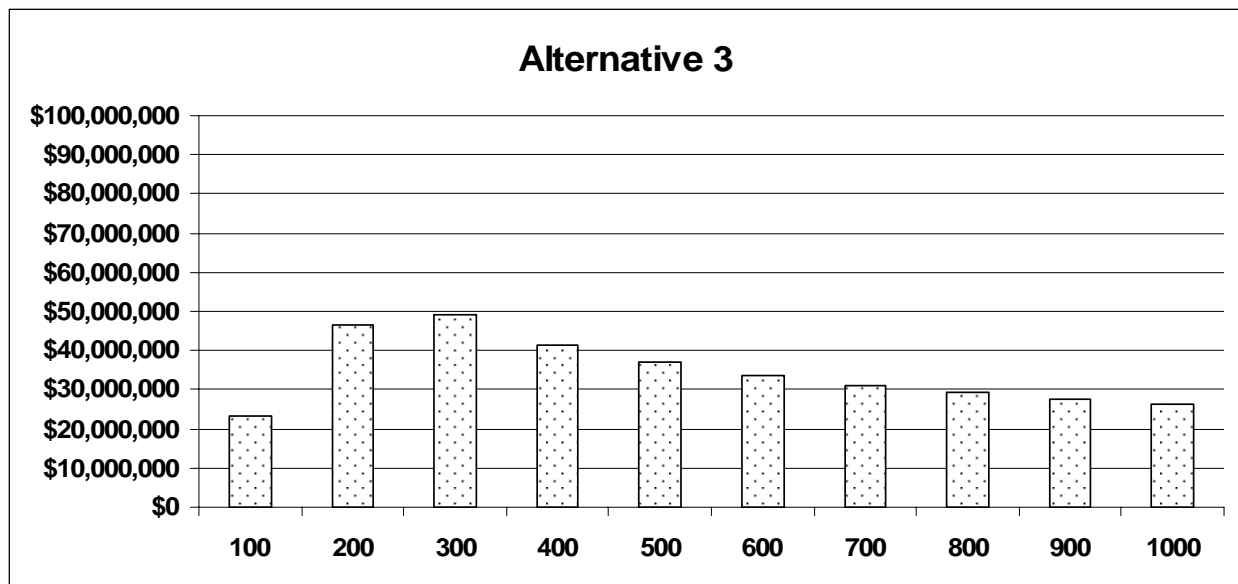
# bids placed	# permits retired	# permits retired - groundfish only	# permits retired - all federal	# capacity retired (capacity units)	# A DAS retired	# active DAS retired	# latent DAS retired	# leasee DAS retired	# history retired (lbs groundfish)	# loligo permits retained	# loligo permits retired	# illex permits retained	# illex permits retired	
100	100	42	58	13,659,547	4,329	3,115	1,895	-751	22,220,345	12	15	3	1	
200	200	85	115	27,524,528	8,697	6,364	3,763	-1,472	45,043,644	25	29	6	3	
300	300	125	175	41,380,521	13,090	9,597	5,677	-2,197	67,629,854	36	44	9	4	
400	355	154	201	51,635,035	16,331	12,347	6,639	-2,826	85,347,039	43	47	10	4	
500	365	173	193	56,979,244	17,750	14,043	6,437	-3,326	94,664,591	46	44	10	4	
600	377	191	186	60,863,680	18,690	14,660	6,542	-3,746	99,375,918	51	44	11	4	
700	389	214	175	64,418,457	19,551	14,908	6,656	-4,274	99,156,376	57	38	12	3	
800	404	237	167	67,459,142	20,409	15,310	6,854	-4,769	97,325,821	64	37	13	2	
900	414	254	161	70,305,232	21,181	15,560	7,067	-5,195	96,795,620	66	35	14	2	
1000	422	270	152	72,725,878	21,739	15,547	7,153	-5,665	96,345,073	69	35	15	2	
<b>FLEET TOTALS:</b>				<b>1008</b>	<b>138,633,560</b>	<b>43,864</b>	<b>32,015</b>	<b>19,134</b>	<b>-7,459</b>	<b>226,698,252</b>	<b>274</b>	<b>274</b>	<b>41</b>	<b>41</b>
# bids placed	% permits retired		% capacity retired	% A DAS retired	% active DAS retired	% latent DAS retired	% leasee DAS retired	% history retired	# monk C permits retained	# monk C permits retired	# monk D permits retained	# monk D permits retired		
100	9.9%		9.9%	9.9%	9.7%	9.9%	10.1%	9.8%	6	12	10	19		
200	19.8%		19.9%	19.8%	19.9%	19.7%	19.7%	19.9%	12	25	21	39		
300	29.8%		29.8%	29.8%	30.0%	29.7%	29.4%	29.8%	19	36	31	58		
400	35.2%		37.2%	37.2%	38.6%	34.7%	37.9%	37.6%	23	44	39	73		
500	36.2%		41.1%	40.5%	43.9%	33.6%	44.6%	41.8%	27	50	44	84		
600	37.4%		43.9%	42.6%	45.8%	34.2%	50.2%	43.8%	31	55	49	85		
700	38.6%		46.5%	44.6%	46.6%	34.8%	57.3%	43.7%	37	59	55	81		
800	40.1%		48.7%	46.5%	47.8%	35.8%	63.9%	42.9%	42	59	63	78		
900	41.1%		50.7%	48.3%	48.6%	36.9%	69.6%	42.7%	45	61	69	71		
1000	41.9%		52.5%	49.6%	48.6%	37.4%	75.9%	42.5%	49	59	74	67		
									<b>187</b>	<b>187</b>	<b>298</b>	<b>298</b>		

Under an Alternative 3 scenario all bids are predicted to be accepted until about 440 bids are submitted (for \$100 million spent) and/or 350 bids submitted (for \$80 million spent). Unlike under Alternatives 1 and 2, the number of permits removed does not stabilize—rather, the more bids that are received, the lower the cost of purchasing a unit of capacity and the more total permits are bought out.

As a hybrid of Alternatives 1 and 2, the impacts of Alternative 3 across the metrics tracked here are somewhat in between those felt under either of those two Alternatives. As the number of bids increases, the proportion of groundfish-permits-only-bought to all-federal-permits-bought shifts from favoring all-federal-permits at lower bid submission levels, to a higher proportion of groundfish-permits-only-bought at higher bids submission levels. This decreases the per-unit-capacity cost of Alternative 3 markedly as the number of bids submitted rises.

At both \$100 and \$80 million allocated, Alternative 3 is highly likely to reach the Ctte’s objective of 25% of total capacity removed. In fact, analysis (**Error! Reference source not found.**) of the funds required to reach the Ctte’s objective at various bid-submission intervals shows that, between 300 and 600 bids submitted, between \$33 million and \$49 million may be required to reach this objective.

**Figure 3 - Estimated cost of removing 25% of total capacity, Alternative 3 with various numbers of bids submitted**



At \$100 million spent, the 50% maximum capacity removal threshold appears likely to be met if more than 600 bids are submitted, an event that is very much possible. Under a situation where \$80 million is spent the simulations do not have the buyout reaching a 50% maximum capacity removal threshold until 900 bids are submitted. As with the two previous Alternatives, it is important to note that if either the Permit Buyback model or the Vessels for Sale model is over-estimating bids, this threshold could be reached at a lower number of submitted bids.

Analysis:

Alternative 3 appears to be a cost-effective way to retire capacity in the groundfish fishery—nearly as cost-effective as Alternative 1. If the requirements of this Alternative are changed to make the retirement of groundfish permits only an option rather than a requirement for those permits with landings Below The Threshold (BTT), and a significant percentage of permit holders BTT opt to divest themselves of all of their federal permits, then the cost of Alternative 3 will creep up towards that of Alternative 2 (and away from Alternative 1).

Like with Alternative 1, Alternative 3's Achilles heal is the potential for effort shifting into other fisheries to compensate for lost groundfish revenue. We were took the same hard look at the permits held by those groundfish permit holder's whose bids were most often accepted under a BTT scenario (that is, only those permit holders required to retire their groundfish permits).

To do this, we looked at the other fishery permits held in conjunction with the groundfish permits that had their bids accepted greater than 90% of the time. We used the simulations when between 600 and 900 bids were submitted, so that we could filter out the bids that were most unlikely to be accepted. Remembering that model iterates 100 times at each of the four iterations between 600 and 900 bids submitted—so these are the permits selected most often after 400 simulations.

For the purposes of highlighting the potential scope of the effort shift issue, we focused on vessels holding loligo, illex, fluke, scup and lobster moratorium permits in conjunction with their groundfish permits. Because monkfish is so intrinsically linked to the groundfish fishery, particularly in the northern management area, we chose not to examine this fishery in any detail at this time.

For vessels with accepted bids, we decided to focus on their ratio of groundfish revenues to total revenues, and in their average annual revenues from groundfish between 2003 and 2005. The groundfish : total revenue ratio is intended to show dependence on groundfish, while the average annual groundfish revenues may show magnitude of effort shift desired as vessels re-direct in an attempt to make up for lost groundfish revenues. Obviously, many boats hold multiple permits in these other fisheries, so the ratios cannot be averaged across the vessels holding these permits; nor should the total groundfish revenues be summed to predict effort shift. Rather, you should use your knowledge of the fisheries to determine, based on the numbers, how much effort shift you believe is likely to occur.

While we make no assumptions regarding which fisheries can or will sustain effort increases, the number of permits in each fishery held by vessels retiring their groundfish permit may be proportional to expected future effort increases resulting from this buyout.

**Table 3 – Potential for effort shift under Alternative 3**

	# permits held in conjunction with retired groundfish permits	% of total revenues from groundfish landings	Average annual groundfish revenues btwn 2003 - 2005	Total 2005 revenues
<b>loligo</b>	20	18.5%	\$716,740	\$28,546,364
<b>illex</b>	4	9.3%	\$96,494	\$8,362,037
<b>fluke</b>	44	19.1%	\$2,067,464	\$28,130,860
<b>scup</b>	38	17.1%	\$1,287,384	\$7,060,818
<b>lobster</b>	50	15.6%	\$2,671,841	\$393,263,805

The results show that groundfish permits retired under these simulations derived very little of their revenues from the groundfish fishery, but there remains the possibility of some effort shifting into other fisheries. While you cannot sum the totals in the third column of Table 3 because most vessels maintain permits in multiple fisheries, you might extrapolate that vessel's divesting themselves of their groundfish permits (only) under an Alternative 3 scenario might look to make up between \$0.3 and \$2 million of lost revenues. This does not appear to be a significant percentage of the total revenues from any of these five fisheries. Like Alternative 2, however, there will also be a large number of permit holders required to divest themselves of all federal permits. Some of these permit holders may be inclined to re-enter the fishery in some way. See the Alternative 2 analysis for more details on this topic.