Comparison of the three Capacity Reduction Alternatives

General thoughts on these analyses:

As we've said, the engines that drive these simulations are the bid estimation models. The degree to which they reflect actualized bids is the degree to which these models will accurately forecast buyout outcomes. If forced to take a side, we would probably say that the Permit-only Buyback model is biased downward (understates actualized bids) due to the influence of scarcity in the permit market. We might say that the Vessels for Sale model is biased upward (overstates actualized bids) due to the lack of large, powerful and high-history boats in the dataset.

The randomization of who places a bid is the best way to go given current data. However, future models could incorporative some assumptions about who is not likely to bid. For example, vessels with monkfish permits in the northern area appear unlikely to part with their groundfish permit under an Alternative 1 or 3-BTT scenario, as it would mean converting from a Monk C or D to a Monk A or B permit. However, because such vessels are unlikely to be BTT under Alternative 3, this may not significantly affect the simulations for Alts 2 and 3. Smaller vessels in the Gulf of Maine, who continue to be disproportionately impacted by the regulations, may depress their bids or they may be more likely than other vessels to submit a bid. However, this hypothesis is also not sufficient to justify tweaking the randomization of submitting bids in our simulations.

One thing we do know is that the higher the participation (more bids placed), the lower the cost of capacity. Overall, it appears we need a minimum of 225 bids placed if we are to have any hopes of reaching our 25% capacity reduction objective. We have no way of knowing how many bids will be placed, other than the fact that 1,000 bids placed seems more than merely unlikely. The marginal cost of fewer (and marginal savings of greater) numbers of bids submitted is illustrated in **Error! Reference source not found.** (below).

We compared the bid scores generated by the two bid estimation models to those realized under the previous two buybacks. To do this, we re-inflated the capacity estimates (basing the SPF on 100% of revenues as opposed to 40% of revenues) and, for the permit-only buyback, multiplied the daily (data envelopment analysis computed) capacity estimate by each permit's year-2000 DAS allocation.

Figure 1 – Comparison of bid scores observed under the 1996 groundfish buyback to the predicted bid scores under an Alternative 2 and Alternative 3 ATT scenario

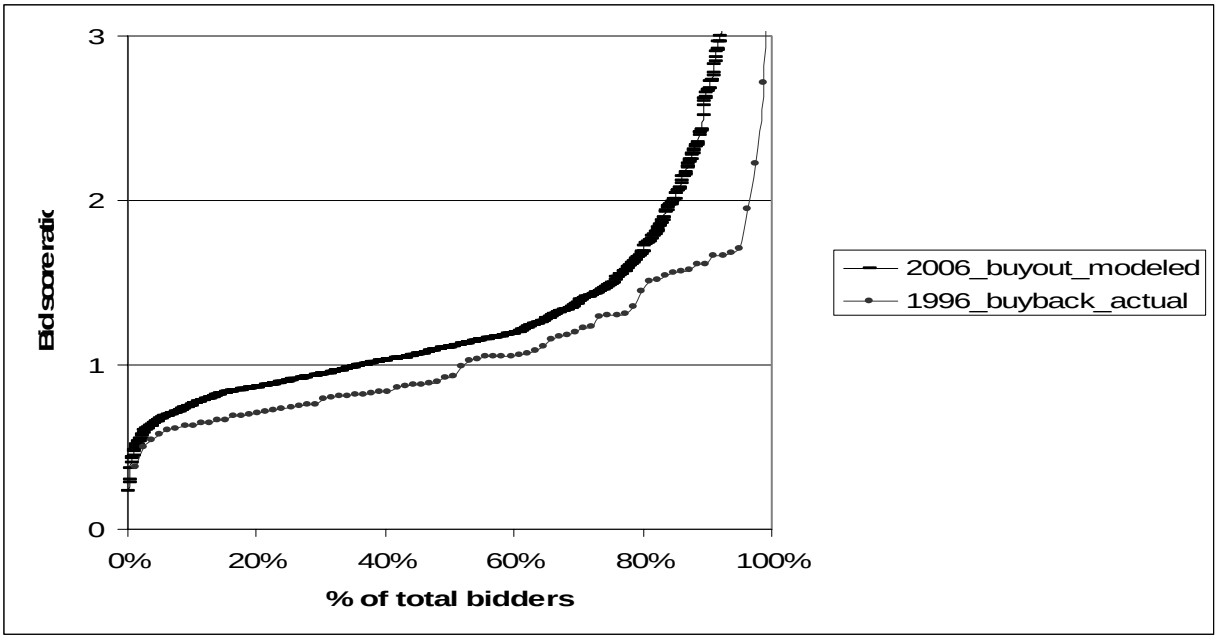
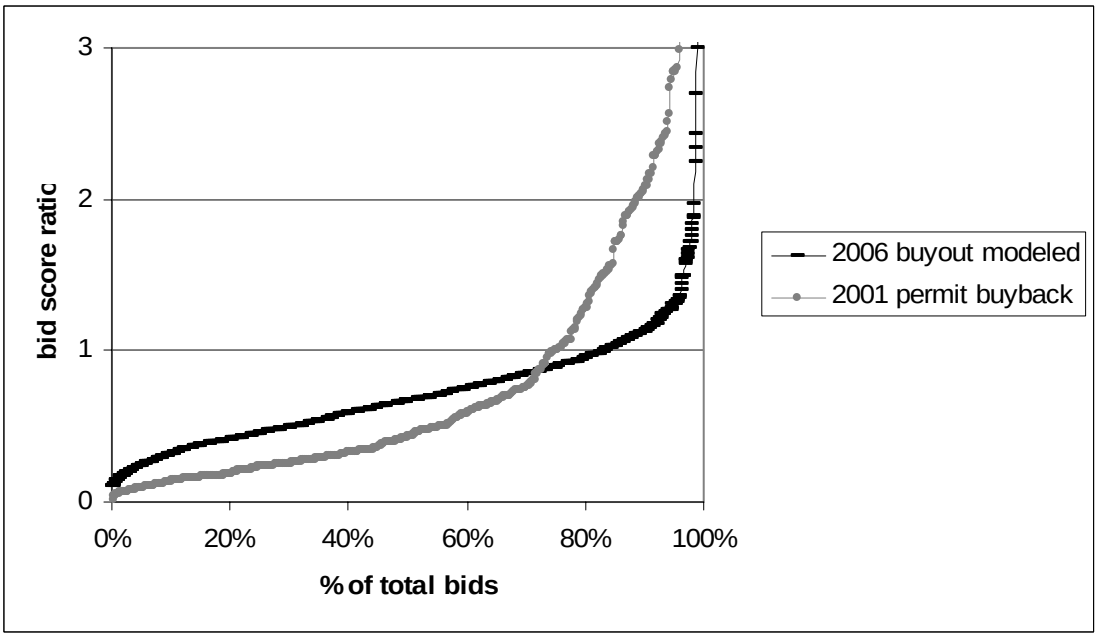


Figure 2 - Comparison of bid scores observed under the 2001 groundfish permit-only buyback to the predicted bid scores under an Alternative 1 and Alternative 3 BTT scenario



The fact that the previously observed ratio of bid to evaluation metric (for the 1996 buyback, this was previous year's revenue and for the 2001 buyback it was a data envelopment analysis-based capacity estimate) appears highly consistent with the predicted ratio of bid to evaluation metric (SPF-computed capacity estimate) gives us some confidence that the distribution of bids predicted in our models may indeed reflect what we would see if (and/or when) bids are actually placed. That is to say, this gives us confidence that our predictions may be in the ballpark of what the buyout could achieve.

Note also that total amount allocated to the buyout may be an important driver. We have not yet had the occasion to work up numbers on the cost of the C-DAS programs, or the payouts associated with potential vessel scrapping. All Alternative scenarios were run at $100 million spent and $80 million spent so that the readers may interpolate between the two, knowing that the actual amount allocated to purchasing capacity is likely to be between these two totals.

Cost of capacity reduction:

The best way to evaluate the cost of the Alternatives is to look at the cost of an individual unit of capacity. To do this, simply divide the total amount allocated ($100 million in these examples) by the amount of capacity it is predicted to retire under each Alternative.

Figure 3 – Average cost per-unit-capacity of the three Capacity Reduction Alternatives when between 500 and 700 bids are submitted

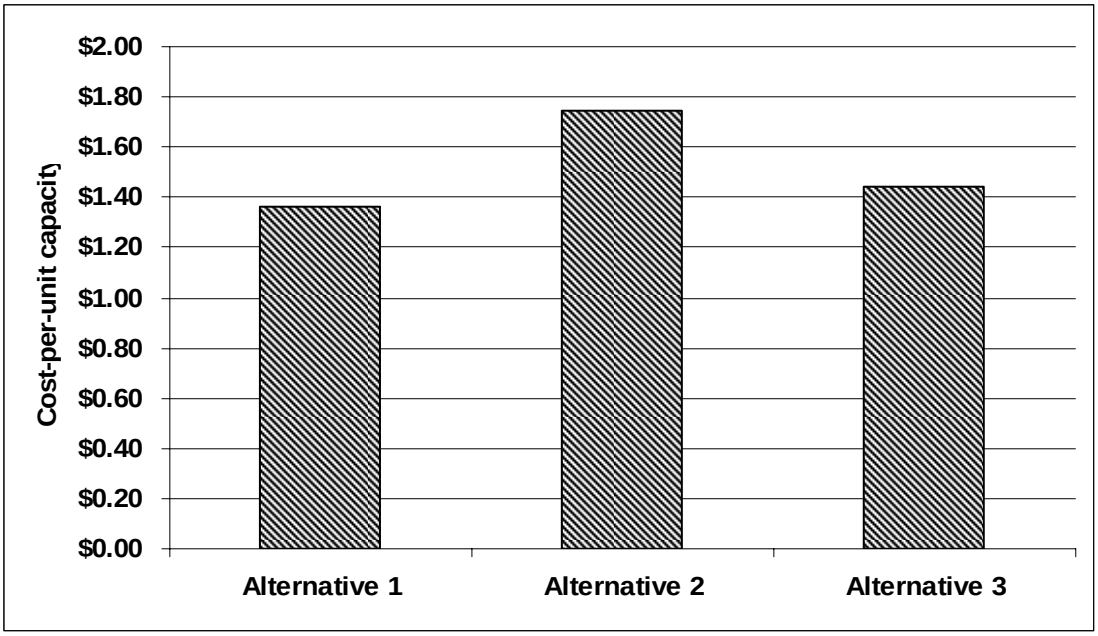


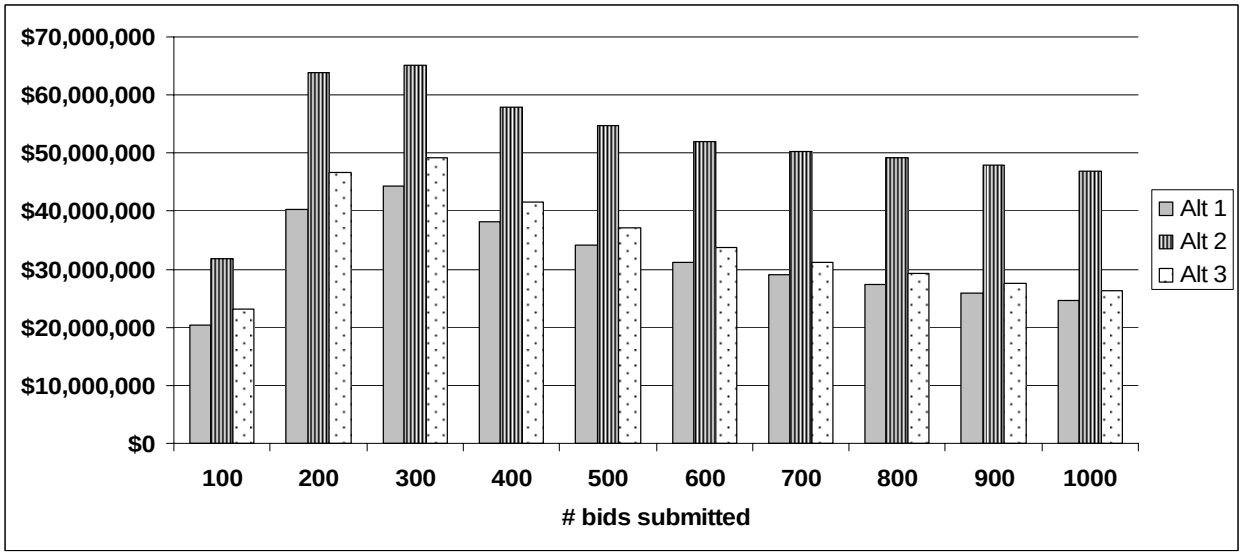
Table 1 – Percentage increase in cost of capacity reduction for Alternatives 2 and 3, relative to Alternative 1 (which is the least expensive)

# bids submitted	Alternative 1	Alternative 2	Alternative 3
300	---	---	---
400	---	---	---
500	0.00%	25.25%	6.19%
600	0.00%	28.71%	5.77%
700	0.00%	31.70%	6.17%
800	0.00%	34.32%	6.15%
900	0.00%	36.59%	6.06%
1000	0.00%	38.43%	5.77%
	Average:	26.98%	5.98%

Clearly, Alternative 1 is the least expensive and Alternative 2 the most expensive per unit of capacity retired. The difference, however, lies in just what type of capacity is being bought out. Under the least expensive per-unit-capacity options (Alt 1 and Alt 3 BTT), only *groundfish* fishery capacity is being removed. Under the more expensive per-unit-capacity options, *all federal waters fishing capacity* is being removed, and vessels bought out are not permitted to participate in any federal fishery. So the comparison is not necessarily apples-to-apples…if the reader is most concerned about groundfish fishery capacity than Alternatives 1 or 3 may look the most enticing. However, if the concerns are of the larger capacity issues in the Northwest Atlantic fisheries, Alternative 2 may be viewed as preferable—some might say that it accomplishes much more than the other two Alternatives.

Another way to look at the cost of the three Alternatives is to compare the predicted amount of money it would take to achieve the minimum 25% capacity removal threshold. This was done for the individual Alternatives in their respective Bundles. Figure 4 (below) shows this for all three Alternatives in the same graphic.

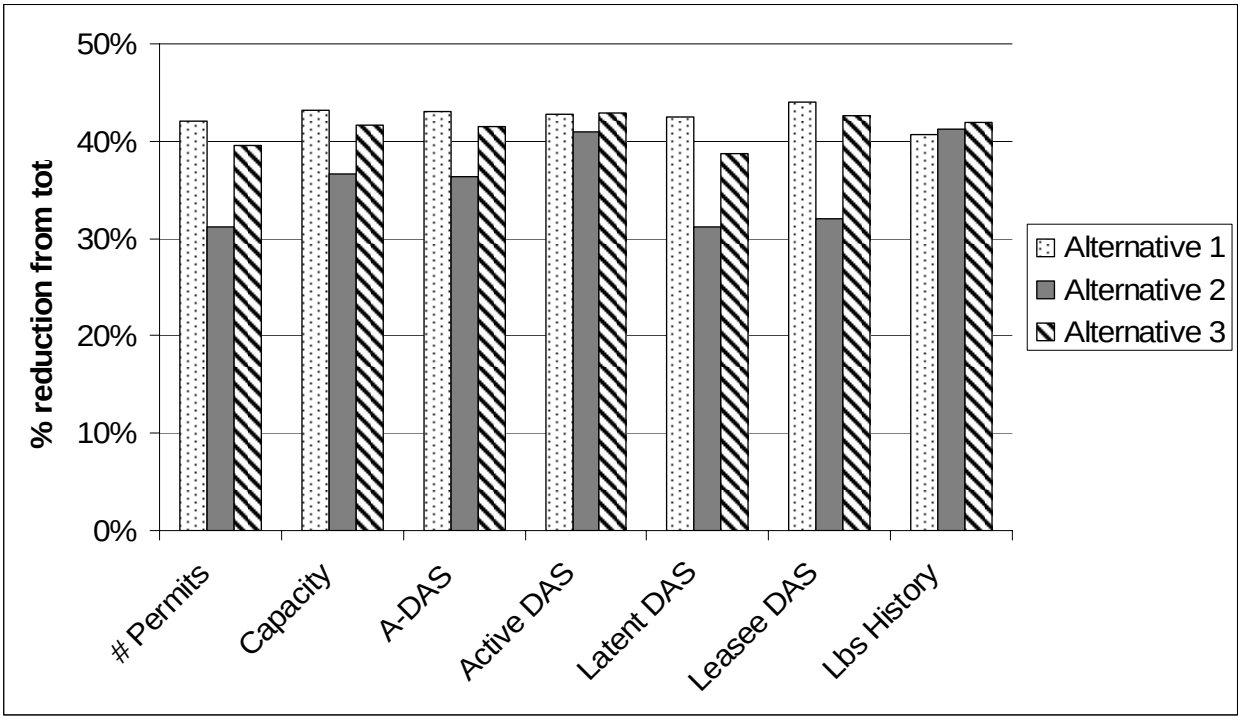
Figure 4 – Cost to achieve the 25% minimum capacity removal threshold for all three Alternatives



Benefits of capacity reduction

To summarize the impacts of the three Alternatives across the metrics we've been tracking, we put together a quick, easy to view summary figure (Figure 5). This shows the average percentage removal, from the total of each metric available today, for each of the three Alternatives. These averages are based on the outputs of the simulation models when between 300 and 600 bids are submitted and $100 million is spent.

Figure 5 – Percent reduction from total of seven key metrics resulting from the three Alternatives assuming $100 million spent



Obviously, under any of the three alternatives, a significant portion of each of the important metrics is captured. It is especially important to note that these analyses tend to point to toward an "even" capture of such things as Active DAS and Latent DAS, meaning that the buyout does not appear likely to purchase, for example, an overly large percentage of latent capacity. Also, all three of the Alternatives capture proportionally more history than raw capacity, so the concern that capacity may be purchased at a higher rate than permit landings history (a concern noted throughout the public meetings) is not substantiated by these models.

Distributional impacts:

The impacts of the three Alternatives were also compared across vessel size class and by homeport state (Table 2, Table 4). In general, it may be said that Alternative 1 appears to remove a greater number of smaller vessels, while Alternative 2 appears to remove larger vessels when looking at the percentage reductions from each length class. By number, more permits for vessels in the 30-54 foot range are retired than in any other size class. This makes sense, however, because 46% of the total fleet is in that size class (Table 3).

By state, Massachusetts clearly has the highest number of permits predicted to be retired (Table 4), with Maine and New Hampshire with the second and third largest numbers predicted across all Alternatives. Alternative 1, which captures a higher number of permits, predicts total state-wide removals from the groundfish fishery in the range of 40-50% for these three States. Alternative 2 predictions have Maine, New Hampshire and Massachusetts removing between 35-40% of their total groundfish fleet as a result of the buyout.

At first glance these numbers may appear large, especially when considering the shoreside infrastructure for these affected states. It is important to remember that, over the medium-to-long-term, total landings are not expected to decline due to the buyout (the impacts of regulations are a

different matter). In fact, should the buyout speed recovery of fish stocks through short-term reductions in fishing mortality or through improved compliance with existing regulations (due to fewer regulated entities), medium and long term landings, and individual vessel revenues, are likely to increase. This will lead to healthier fish processing and shoreside vessel support industries.

Table 2 – Number of permits retired and percentage of total length class removed from the three capacity reduction Alternative simulations

length class	length	Alternative 1		Alternative 2	
		# retired	% of flt retired	# retired	% of flt retired
1	0-29 ft	80	59.8%	28	20.9%
2	30-54 ft	227	48.7%	147	31.5%
3	55-74 ft	119	42.3%	132	47.0%
4	75 ft +	46	37.3%	59	47.6%
	total:	*472*		*366*	

length class	length	Alternative 3			
		BTT		ATT	
		# retired	% of flt retired	# retired	% of flt retired
1	0-29 ft	88	65.8%	2	1.8%
2	30-54 ft	122	26.3%	69	14.9%
3	55-74 ft	68	24.1%	58	20.6%
4	75 ft +	26	21.1%	34	27.6%
	total:	*304*		*164*	

Table 3 – Length class breakdown of all category A and B DAS permit holders

length class	length	# permits	% of total
1	0-29 ft	134	13.3%
2	30-54 ft	466	46.4%
3	55-74 ft	281	28.0%
4	75 ft +	124	12.3%
	total:	*1005*	

Table 4 – Number of permits retired and percentage of total permits from each homeport state removed from the three capacity reduction Alternative simulations

HPST	Alternative 1		Alternative 2	
	# retired	% of total permits retired	# retired	% of total permits retired
CT	10	64.3%	3	18.8%
DE	1	18.3%	4	100.0%
FL	1	73.0%	0	0.0%
MA	242	45.3%	219	41.0%
ME	88	55.8%	60	38.0%
NC	6	39.2%	2	13.3%
NH	37	58.5%	27	42.2%
NJ	22	41.6%	8	15.1%
NY	24	33.6%	7	10.0%
RI	40	47.5%	36	42.4%
VA	1	10.4%	0	0.0%
	472		*366*	

HPST	Alternative 3			
	BTT		ATT	
	# retired	% of total permits retired	# retired	% of total permits retired
CT	7	40.8%	2	15.3%
DE	0	0.0%	3	81.5%
FL	1	82.0%	0	0.0%
MA	120	22.5%	144	26.9%
ME	60	37.7%	38	23.8%
NC	5	32.7%	1	5.5%
NH	15	23.0%	18	28.0%
NJ	17	32.3%	3	6.2%
NY	15	21.0%	4	5.8%
RI	18	21.1%	20	23.0%
VA	1	11.7%	0	0.0%
	257		*233*	

The final message we'd like to leave you with is that it appears highly unlikely that buyout funds would be "wasted." These models, to the degree that they may resemble reality, point towards a buyout that is likely to capture all of the aspects of fishing effort (DAS, active DAS, history, capacity) that one could hope for, and in reasonable proportions. The primary stumbling block appears to be willingness of permit holders to submit bids. If this proves to be minor, and a better-than-fair percentage of the industry submits bids, the buyout appears likely accomplish many good things.