TO: MCRC COMMITTEE

FROM: CHAD DEMAREST

SUBJECT: IMPACTS OF THE PREMIUM PAYMENT FOR MORATORIUM PERMITS IN NON-GROUNDFISH FISHERIES

DATE: 9/13/2006

CC:

Understanding the impacts that the premium payment for permit holders with moratorium (limited access) permits in non-groundfish fisheries will have on the proposed Buyout is tricky. To try to keep things as simple as possible, here are the primary questions I'll try to address:

1. Why are we considering a premium payment (aka 'the multiplier') for non-groundfish moratorium permits?

2. How do determine the size of the payment?

3. What are the advantages and disadvantages of higher or lower premium payments (multipliers)?

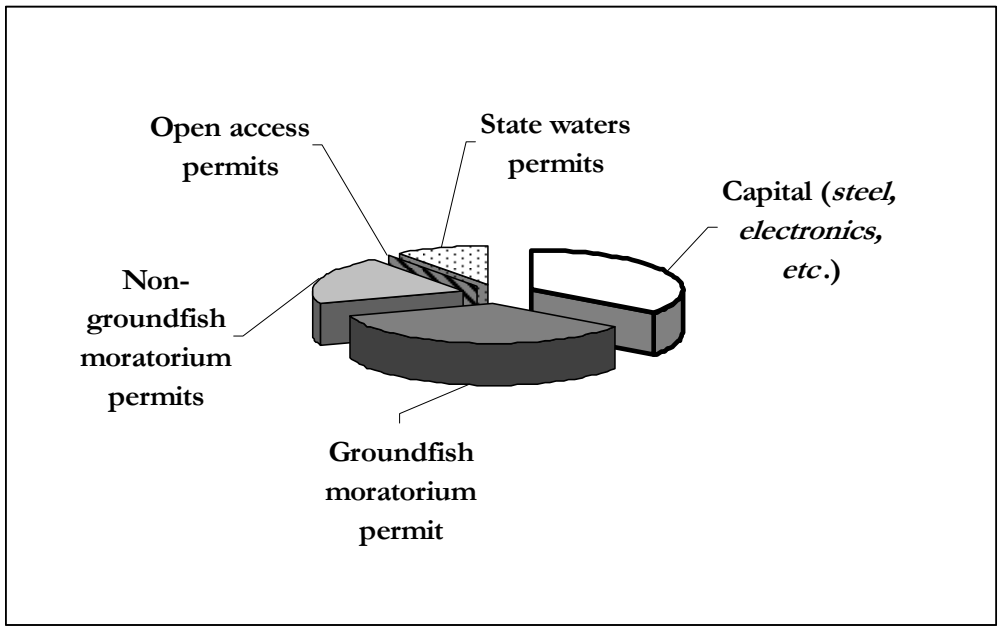
4. Do implementation methods impact the outcome of the Buyback?

Why a premium payment

The Ctte signaled its intent from the very first day that they were interested in using groundfish industry funds to buy out groundfish fishery capacity *only*. The premium payment was conceived as a way to accommodate this requirement with Alternatives that mandated the surrender of all federal permits—groundfish industry funds would be allocated to the groundfish portion of a permit holder's total value for their business, and a federal grant would be allocated to the portion of their total value that derived from other fisheries. Moratorium (limited access) permits were only considered in this because open access permits do not, in and of themselves, have any asset value.

Figure 1 (below) shows the breakdown of asset values for a hypothetical fishing business. A permit holder's bid will likely be comprised of each of these, and the magnitude of each will depend on many factors. Realistically, for the purposes of the buyout, the groundfish industry loan will go toward several of these asset values – capital, state waters permits, and groundfish permits, most likely. Further payments, beyond the value of a submitted bid, are made towards capital (for scrapping if elected) and groundfish moratorium permits (for category 'C' Days-at-Sea).

Figure 1 – Hypothetical breakdown of the value of a fishing business



So, under an Alternative 2 or Alternative 3 Above-the-Threshold (ATT) scenario, one that requires divestiture of all components of a permit holder's fishing business, it appears virtually impossible to use groundfish loan funds solely for the purchase of groundfish permits. However, the original intent of the Ctte was the purchase of groundfish capacity, and the values of state waters permits and the physical capital are an integral part of a groundfish permit's capacity. The value of these may be thought of as the groundfish fishery capacity portion of the total value of a permit holder's business.

The intention of the premium payment, therefore, is to compensate for the Non-groundfish fishery capacity value of that business. It follows then that some portion of the federal grant should be expected to go towards the value of the physical capital and the state waters permits (for example), in addition to the strict value of the non-groundfish moratorium permits. For this reason, we would expect the premium payment to be somewhat (and perhaps substantially) higher than the values of the individual loligo, fluke, scup, lobster or monkfish permits summed.

The net effect of the premium payment is the expansion of the total amount allocated to the buyout. A $100 million buyout under Alternative 1 becomes a $130 million buyout under Alternative 2. Theoretically, this should level the playing field between these two alternatives somewhat. The big difference is that, under Alternative 1, a permit holder's bid (and the sum total of the industry's loan) is going exclusively toward the value of the groundfish moratorium permit, without mixing in the values of physical capital, state waters permits, and all of the other factors that coincide with selling an entire business lock, stock and barrel. Therefore, the per-unit-capacity costs associated with a $130 million Alternative 2 buyout will be marginally higher than those same costs associated with a $100 million Alternative 1 buyout. The premium payment, though, goes a long way towards bringing the two per-unit costs closer, and it provides a vital mechanism to ensure that the groundfish industry does not subsidize the total cost of removing non-groundfish fishing capacity.

Size matters

How to determine the best size for the premium payment is challenging. The effect of this payment is to capture more capacity for the same size groundfish industry loan. If the funds available for the premium payment were unlimited, than an industry loan would not be necessary. These funds are most likely not unlimited. We don't yet know, though, what the limitations will be.

The intention, again, is to compensate for the asset value of the non-groundfish moratorium permit portion of a permit holder's business. Asset values are typically thought of as the discounted net present value of the future revenues derived from that asset (those permits). The Ctte, at my recommendation, chose 1.5 times the average landings in moratorium fisheries—fluke, loligo, scup, lobster (trap), and monkfish—between the years 2003-2005 as an approximation of this asset value. You might not know it, but that's what you did.

The program was, of course, capped at $500K to discourage those with highly profitable businesses centered around non-groundfish fisheries from taking advantage of this payment by selling their businesses and re-entering their previous fisheries at a lower cost than what they received via the buyout.

At the last Ctte meeting the question was asked "is this multiplier the right value?" To this end, I've prepared **Error! Reference source not found.** (below) to allow comparisons of the fleet-wide average premium payment, by size class, at various approximations of the asset value of non-groundfish moratorium fishery capacity. In this case, that means various multipliers of average 2003-2005 revenues in moratorium-permitted fisheries.

Table 1 – Fleet-wide average premium payments by size class at various multipliers

len_class	Premium payment multiplier			
	1.0	1.5	2.0	2.5
1	$3,967	$5,950	$7,934	$9,917
2	$43,310	$64,782	$85,802	$105,622
3	$81,215	$116,723	$146,608	$170,832
4	$172,578	$235,202	$278,226	$307,630

This table does not tell you the composition of those premium payments, and this is important because all five moratorium permit categories do not have the same asset value, and they are not all possessed by every vessel in the fleet. But this table does give you an indication as to the magnitude of the premium payment—the federal grant portion of the total payout a permit holder will receive post-buyout—at these four proxies for asset value. It is up to the Ctte to determine which is the most fair.

Running with numbers

Realistically, though, the fairest remuneration or the most accurate approximation of non-groundfish moratorium capacity asset value is not necessarily the best outcome for the purposes of the buyout. Game theory (the, um, science of maximizing an entities' advantage given multiple decisions in a competitive environment) would tell you that it is in the buyout's best interest to obtain the maximum amount of capacity for a given amount of money, regardless of accurately or fairly compensating a portion of a permit holder's total business value.

A decent starting hypothesis is that a higher multiplier will buy out more capacity. The cost of this, hypothetically, is that the more total capacity is bought out, the higher the federal grant will have to be. We can actually test these hypotheses.

First, though, we need to get on the same page about how the premium payments work. As the Prospectus is currently written, a permit holder is notified of what his or her premium payment will be at the time the bid is solicited—so the intention is that they will subtract this amount from what they hope to be their total compensation, and bid the difference.

The implication of this subtraction for the outcomes of the buyout is profound. If the permit holder has multiple moratorium permits with high landings in those fisheries between the years 2003 and 2005, that permit holder is likely to receive a large premium payment. Logically, this may induce that permit holder to place a bid that is low relative to the capacity of their vessel. Note that this logic holds only to a point—if the permit holder's premium payment has capped out at $500K, that permit holder is likely to bid relatively higher—rather than lower—to compensate for the value of the non-groundfish capacity that is not being compensated via the premium payment. It can then be assumed that those whose premium payments are capped at $500K, especially at the lower two multipliers (1.0 and 1.5), are less likely to submit relatively low bids than those whose premium payments are in and around the mean payments found in Table 1.

Table 2 – Number of permit holders achieving the $500K maximum premium payment threshold

Premium payment multiplier	# payments = $500K
1	10
1.5	31
2	52
2.5	81

Resuming my previous line of thought, those receiving larger (but not maxed-out) premium payments are likely to be at an advantage when bidding against those receiving a smaller premium payment (those with a high dependence on groundfish between 2003-2005). *The effect of this is that those recently active in other fisheries are able to bid lower, but receive the same (or larger) total payout than those with higher recent dependence on the groundfish fishery.*

To test if this might be borne out in the model buyouts, I looked at the dependence on groundfish (as a percent of total revenues) for those with accepted bids in our simulations when these simulations are run using premium payments at each of the four multipliers (as well as the assumptions noted above).

Table 3 – Dependence on groundfish for businesses bought out in simulations using various premium payment multipliers

	Premium payment multiplier			
len_class	**1.0%**	**1.5**	**2.0**	**2.5**
1	98.0%	98.0%	98.0%	98.0%
2	71.0%	67.0%	66.0%	66.0%
3	72.0%	73.0%	71.0%	67.0%
4	80.0%	81.0%	80.0%	64.0%
	73.2%	*71.6%*	*70.6%*	*66.1%*

What we see is that as the premium payment increases, the average dependence on groundfish decreases. This demonstrates the basic principle--that the premium payment multiplier, as it is currently specified in the Prospectus, puts those with a higher proportion of recent revenues in groundfish at a disadvantage relative to those with greater recent revenues in other moratorium fisheries.

Is this fair? That depends on the intention of the program. The objectives of the program, you'll remember, are:

1. *To permanently reduce fishing capacity in the northeast multispecies fishery*
2. *To provide those wishing to leave the groundfish fishery with a legitimate, financially sensible way of doing so*
3. *To preserve the essential character of the New England groundfish fleet by not targeting any one gear type, size class or geography for buyout*
4. *To ensure that the benefits to those remaining in the industry justify the costs of the loan*

The primary concern might be Objective 2, in that those wishing to leave the fishery may be those most dependant on the groundfish resource—those that are relatively disadvantaged by the current configuration of the program. It's food for thought.

Briefly returning to the hypothesis that increased multipliers (increased premium payments) will lead to increased capacity retired through the buyout, we find through modeling that this is the case--but not by as much as you might think. As the multiplier increases, the size of the corresponding bid decreases *to a point.* As the value of the premium payment gets closer to the total value a permit holder may place on his or her business, the size of the bid that permit holder will likely submit levels off such that, at higher multipliers, the permit holder's total payout increases but the size of the bid remains about the same. The permit holder will surely see value in their groundfish permit, and will not be willing to "let it go for next-to-nothing." Consequently, the total cost of the buyout will rise (Table 4) but the amount of capacity captured will likely not rise as fast (Table 5).

Table 4 – Cost of buyout based on Alternative 2 simulations, average of between 300 and 600 bids submitted

Multiplier	# permits retired	total grant	total loan	total cost
1	308	$16,639,766	$98,725,853	$115,365,619
1.5	307	$23,529,141	$98,767,430	$122,296,571
2	308	$29,505,640	$98,900,138	$128,405,778
2.5	307	$34,111,915	$98,804,410	$132,916,325

Table 5 – Percentage of important metrics retired via the buyout at different premium payment multipliers, average of between 300 and 600 bids submitted

Multiplier	% permits retired	% capacity retired	% A DAS retired	% active DAS retired	% latent DAS retired	% leaseed DAS retired	% history retired
1.0	30.6%	36.4%	35.8%	40.6%	30.3%	31.4%	41.2%
1.5	30.5%	36.7%	36.4%	40.8%	31.3%	32.6%	41.0%
2.0	30.5%	36.9%	36.7%	40.6%	32.0%	33.2%	40.8%
2.5	30.5%	39.4%	38.8%	42.7%	34.3%	35.1%	42.7%

Free and easy with your Uncle's cash

There may be another way. Rather than providing the permit holders with the value of their premium payment up front and asking them to adjust their bids accordingly, we could simply ask the permit holders to bid the full value of their business and subtract the amount of premium payment they would receive under the current option from the industry loan column (and add it to the federal grant column). This solves two problems:

1. It eliminates the bias against those with high recent dependence on groundfish by evaluating all bids evenly (that is, all bids are evaluated on the basis of their total-

business-value to capacity ratio, rather than their groundfish-capacity-value to capacity ratio)

2. It lowers the overall cost *to the industry* of buying out capacity, because in situations where premium payments are sufficiently high relative to what a permit holder is likely to value their business, there is not the same incentive to inflate bids (the "can't let it go for nothing" problem).

The down side of this, and there always is one, is that it will likely cost Uncle Sam much more money. Assuming that there is a limit to our Uncle's largesse, this extra cash may ultimately be obtained by lowering the total amount sought in loan. Not such a bad thing, however, if the same amount of capacity can be bought out with a lower loan value--and a lower consequent repayment fee (Table 6).

Table 6 - Cost of buyout based on Alternative 2 simulations, average of between 300 and 600 bids submitted *using alternate handling of premium payments*

Multiplier	# permits retired	total grant	total loan	total cost
1	399	$21,337,389	$87,109,853	$108,447,241
1.5	398	$30,243,315	$87,139,408	$117,382,723
2	400	$38,087,381	$86,966,138	$125,053,519
2.5	400	$44,326,158	$87,029,185	$131,355,343

Staff recommendations

All simulations conducted to analyze the size of the premium payment multiplier point toward a very low marginal return (in terms of capacity and other metrics) to higher multipliers. Higher multipliers, in fact, translate directly into higher grants (possibly making the buyout a tougher sell in Congress) without significant gains for the groundfish industry—beyond the not-to-be-overlooked benefit of transferring wealth from unknown Congressional initiatives into the pockets of New England fisherman. Without intending to slight this highly deserving constituency, *I recommend that the Ctte consider multipliers between 1 and 1.5.*

The way that the premium payments are handled in the bid evaluation process is critical. The alternate method that I proposed is fairer (if I were the arbiter of fair, that is) and cheaper to the industry than the way it is currently proposed in the Prospectus. It likely results in a larger proportion of the financial burden being placed on Congress, but it may reduce the total amount needed to achieve significant capacity reductions. *I recommend that the Ctte seriously consider this alternate approach to evaluating bids.*

I was unable to prepare a table equivalent to Table 5 for this alternate idea (regrettably) but I did include a full accounting of the input data for Table 4 and Table 6 (end of document).

Table 7 – Total cost accounting, at various bid submission levels and for various multipliers, for Alternative 2 *as it is currently configured*

# bids submitted	# permits retired	total grant	total loan	total cost	# permits retired	total grant	total loan	total cost
	Multiplier = 1.0				Multiplier = 1.5			
100	100	$5,387,335	$31,995,590	$37,382,925	100	$7,659,918	$31,732,730	$39,392,648
200	200	$10,589,238	$64,015,500	$74,604,738	200	$15,606,563	$64,051,110	$79,657,673
300	300	$16,407,687	$95,508,120	$111,915,807	300	$23,473,447	$95,668,500	$119,141,947
400	312	$17,241,918	$99,796,340	$117,038,258	309	$23,909,236	$99,825,220	$123,734,456
500	310	$16,445,228	$99,760,390	$116,205,618	310	$23,390,323	$99,770,000	$123,160,323
600	312	$16,464,232	$99,838,560	$116,302,792	311	$23,343,557	$99,806,000	$123,149,557
700	309	$15,923,292	$99,784,190	$115,707,482	310	$23,167,212	$99,829,560	$122,996,772
800	311	$15,162,781	$99,806,890	$114,969,671	310	$21,870,410	$99,811,830	$121,682,240
900	311	$14,931,511	$99,781,890	$114,713,401	311	$21,565,428	$99,830,910	$121,396,338
1000	310	$15,046,277	$99,790,740	$114,837,017	310	$21,484,174	$99,795,270	$121,279,444
	Multiplier = 2.0				Multiplier = 2.5			
100	100	$9,428,017	$32,250,100	$41,678,117	100	$11,405,184	$31,906,600	$43,311,784
200	200	$19,481,731	$63,778,950	$83,260,681	200	$22,752,143	$63,971,240	$86,723,383
300	300	$29,359,039	$96,186,590	$125,545,629	300	$33,895,029	$95,837,420	$129,732,449
400	311	$30,557,374	$99,787,630	$130,345,004	310	$35,007,690	$99,797,320	$134,805,010
500	309	$29,189,280	$99,798,730	$128,988,010	308	$33,476,673	$99,765,460	$133,242,133
600	311	$28,916,868	$99,827,600	$128,744,468	311	$34,068,268	$99,817,440	$133,885,708
700	309	$28,576,758	$99,819,400	$128,396,158	309	$32,712,251	$99,775,060	$132,487,311
800	310	$27,054,651	$99,791,830	$126,846,481	310	$31,577,957	$99,829,290	$131,407,247
900	311	$26,985,656	$99,803,690	$126,789,346	311	$31,201,722	$99,807,590	$131,009,312
1000	310	$26,777,884	$99,796,210	$126,574,094	310	$30,978,244	$99,786,860	$130,765,104

Table 8 - Total cost accounting, at various bid submission levels and for various multipliers, for Alternative 2 *under the alternate approach to bid evaluation*

# bids submitted	# permits retired	total grant	total loan	total cost	# permits retired	total grant	total loan	total cost
	Multiplier = 1.0				Multiplier = 1.5			
100	100	$5,336,363	$21,291,150	$26,627,513	100	$7,773,171	$21,099,570	$28,872,741
200	200	$11,065,423	$42,494,670	$53,560,093	200	$15,304,592	$42,986,670	$58,291,262
300	300	$16,305,360	$63,794,480	$80,099,840	300	$23,232,254	$63,687,500	$86,919,754
400	400	$22,104,737	$84,998,200	$107,102,937	400	$31,128,189	$85,191,980	$116,320,169
500	466	$25,081,035	$99,777,010	$124,858,045	461	$35,459,437	$99,791,820	$135,251,257
600	430	$21,858,423	$99,869,720	$121,728,143	429	$31,153,382	$99,886,330	$131,039,712
700	385	$17,819,035	$99,826,900	$117,645,935	386	$25,981,263	$99,794,330	$125,775,593
800	363	$14,563,740	$99,795,080	$114,358,820	364	$21,016,259	$99,795,600	$120,811,859
900	345	$11,981,548	$99,806,550	$111,788,098	347	$17,284,070	$99,783,840	$117,067,910
1000	331	$10,401,476	$99,787,020	$110,188,496	332	$14,996,851	$99,793,530	$114,790,381
	Multiplier = 2.0				Multiplier = 2.5			
100	100	$10,052,357	$21,155,870	$31,208,227	100	$11,108,046	$21,570,400	$32,678,446
200	200	$19,173,152	$42,374,760	$61,547,912	200	$22,277,166	$42,466,790	$64,743,956
300	300	$29,096,410	$63,152,170	$92,248,580	300	$33,889,298	$63,988,370	$97,877,668
400	400	$38,864,677	$85,085,830	$123,950,507	400	$45,612,529	$84,527,800	$130,140,329
500	465	$44,620,516	$99,747,980	$144,368,496	463	$51,561,964	$99,776,020	$151,337,984
600	434	$39,767,924	$99,878,570	$139,646,494	435	$46,240,840	$99,824,550	$146,065,390
700	384	$31,980,816	$99,801,090	$131,781,906	389	$37,567,574	$99,818,010	$137,385,584
800	364	$26,318,050	$99,799,840	$126,117,890	362	$30,251,641	$99,758,900	$130,010,541
900	346	$21,643,333	$99,812,710	$121,456,043	348	$25,448,338	$99,832,520	$125,280,858
1000	330	$18,704,396	$99,753,050	$118,457,446	331	$21,876,473	$99,757,850	$121,634,323