

PRELIMINARY EVALUATION OF THE EFFECTS OF PERMIT STACKING ON SEASON LENGTH AND LIMITS IN THE 3-TIERED, LIMITED-ENTRY, FIXED-GEAR FISHERY FOR SABLEFISH

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The draft version of the Strategic Plan presented to the Council at this meeting identifies the development of a voluntary stacking program for the 3-tiered sablefish fishery as a high priority. In support of that discussion, this document summarizes the results of a modeling exercise intended to provide insight into the changes in season length and cumulative limits that would be required to maintain the desired level of "overhead" in the fishery. As such, this analysis is predicated on the assumption that the moratorium on new IQ programs remains in force.

If the moratorium were to lapse in 2000, a season length of at least two months would be anticipated in 2001. Since season length would be far less constraining under those circumstances, the number of permits that might reasonably be used for stacking would be higher and the distribution of stacked permits would be quite different than portrayed in this analysis. Without the need for overhead, cumulative limits would fall to the point where the cumulative limits times the number of endorsed permits in each tier equalled the target poundage for the fishery. Given the current target, the Tier 1 limit would be 66,510 lb, with limits for Tiers 2 and 3 roughly 30,000 lb and 17,000 lb, respectively. A conservative expansion of the currently estimated permit catching capacities to reflect a 2-month season suggests that at least 62 permits could catch at least 200,000 lb--about three Tier-1 limits--in that amount of time. Of course, this represents the ability of these 62 permits to catch the equivalent of 186 Tier-1 limits, and there are only 164 sablefish-endorsed permits, and just 27 of those are Tier 1. Given this circumstance, the ultimate disposition of stacked permits in a 2-month fishery without overhead considerations would be highly uncertain.

In the modeling scenario developed for this analysis, 30 permits are assumed to be stacked in a fishery with the same target poundage as in 2000. The primary criterion used in determining which permits would add an additional permit was the poundage difference between the estimated catching capacity of the permit and the amount of its current cumulative limit. The degree to which that catching capacity has actually be utilized in recent fisheries was also considered. Determining which permits would be included in the group providing the stacked permits was more complicated. Factors included in developing a ranking permits according to their likelihood of being stacked included 1) the difference between a permit's current limit and its projected landings; 2) the difference between a permit's current limit and its recent sablefish landings; 3) the value of its sablefish limit poundage relative to recent earnings from other groundfish and non-groundfish species; and 4) ownership of multiple permits and whether any such permits are currently leased.

To simplify the modeling, no more than one permit was stacked on any other, and the original permit attached to a vessel was always retained by that vessel if it remained in the fishery. In other words, a vessel currently having a Tier-2 permit was only evaluated with regard to adding another permit, not with regard to selling it and buying two Tier-3 permits. The analysis does not evaluate how many permits would be stacked if the opportunity were available. No consideration of the cost of obtaining permits or the effects of doing so on vessel profitability was included. Permits selected to add another permit were assigned a permit from a tier having a limit poundage that was less than, or near, the estimated difference between their catching capacities and existing limit poundages.

The number of 30 stacked permits was selected, during the evaluations described above, because it did not appear that many more permits would have an ability to make full use of an additional limit, given the time constraints placed on the fishery. Therefore, 30 probably represents a reasonable estimate of the largest number of permits that would be stacked under a voluntary program subject to existing overhead considerations. Uncertainties regarding the limit poundage that would be realized through stacking, as well as the time that would be available to catch it, could discourage some potential stackers from doing so. Additionally, market conditions might be such that the expected financial benefits from stacking would not exceed the costs of permit acquisition for many vessels that have the physical capability of landing additional

limits. Because those who acquire additional permits to stack will be buying permits conveying access to a suite of groundfish species--not just sablefish--the status of rockfish allocation, fixed-gear rockfish endorsements, changes in groundfish limits for 2001 (and beyond), and the ability to obtain higher rockfish limits through stacking will also affect the willingness of individuals to purchase permits for stacking. On the basis of current ownership of multiple permits and permits that have few or no landings in recent fisheries, a reasonable estimate for the minimum number of stacked permits would be in the 7-10 range.

Table 1 provides a summary of permit shifts used in this scenario. The pool of 30 stacked permits is drawn from all three tiers: 3 from Tier 1, 9 from Tier 2, and 18 from Tier 3. This represents about 11% of the Tier-1 permits, and about 20% of the permits in each of the other tiers. The stacked Tier-1 permits were distributed to one permit in each of the three tiers. Of the 9 stacked Tier-2 permits, 3 went to Tier-1 permits, 2 to Tier-2 permits, and 4 to Tier-3 permits. Of the 18 stacked Tier-3 permits, 3 were assigned to Tier-1 permits, 7 to Tier-2 permits and 8 to Tier-3 permits.

Each of the two models used to provide recommendations for the 2000 fishery (Attachment D.6.a) was used to project limit size and season length under this assumed distribution of permits. Table 2 summarizes the overhead results using these model configurations, with the addition of stacking. Also, the last row shown for each model indicates the estimated amount of overhead if this stacked fleet were provided with the season length and limits recommended for the 2000 fishery (with that model). The righthand columns illustrate the difference in the contribution to estimated overhead between the group of permits fishing a single limit and those fishing two.

Table 3 provides a more detailed summary of limit amounts, season lengths and overhead for the two model configurations. For each case, the 2000 model results without stacking are provided first, for comparative purposes. With stacking, an 8-day fishery, under Model 1, would meet the worst-case overhead goal of exceeding 15%, however the expected overhead is slightly below the current minimum target of 25%. As a result, both models indicate that in order to meet both overhead standards, the fishery would need to be constrained to 7 days. This would represent a reduction of 2 days from the 2000 Model-1 recommendation and 1 day from the Model-2 recommendation. Due to the greater reduction in length under Model 1, the limits available for a 7-day fishery with 30 stacked permits would be about 6% higher than recommended for a 9-day fishery in 2000. Because the 8-day scenario is so close to achieving the overhead objectives, reduction of another full day produces much higher overhead than necessary (41%). Projected limits for 7 days under the more conservative Model 2 are lower than the Model-2 recommendations for 2000, but the estimated overhead is closer to the minimum standards.

Assuming that sufficient overhead will continue to be a concern, the difference between these results and projections for the 2000 fishery underscores the need for a management structure which will allow final parameters for the fishery to be determined after a deadline has passed marking the close of permit stacking that can be utilized during that year's fishery.

Table 1.--Distribution of 3-tiered sablefish endorsements in the hypothetical modeling of 30 stacked permits.

	Original tier assignment			Total
	1	2	3	
# of Tier 1 endorsements after stacking	25	1	1	27
# of Tier 2 endorsements after stacking	3	36	4	43
# of Tier 3 endorsements after stacking	3	7	84	94
Total endorsements after stacking	31	44	89	164
# of stacked permits	3	9	18	30
Tier 1 only	17			17
Tier 2 only		24		24
Tier 3 only			63	63
Tier 1+1	1			1
Tier 1+2	3	1		4
Tier 1+3	3		1	4
Tier 2+2		2		2
Tier 2+3		7	4	11
Tier 3+3			8	8

Table 2.--Comparison of estimated overhead for the entire fleet with values for vessels stacking permits or fishing a single permit in the hypothetical stacking scenario.

	Fleet overhead	Overhead among vessels with:	
		stacked permits	single permits
Model 1 configuration			
8 days	22%	9%	33%
7 days	41%	18%	61%
9 days & 2000 limits	19%	8%	26%
Model 2 configuration			
7 days	30%	10%	46%
8 days & 2000 limits	25%	8%	38%

Table 3.--Comparison of recommendations for the duration and cumulative limits for the 2000 primary fishery with projections for a fishery in which 30 underutilized permits were stacked.

	Tier 1	Tier 2	Tier 3	Total	Worst Case (1-day differential)
# of permits	27	43	94		
Model 1: (less conservative)					
with a general landings reduction of 1% and landings reductions for permits not fishing in [1999:1998:1997] of (30%:20%:10%) and/or landings reductions for achieving less than [50%:70%] of their available 1999 limit (20%:10%)					
Tier-specific capacity reductions	2%	13%	33%		
Model results for the 2000 fishery					
Duration				9 days	
Cumulative Limit	81,278	36,731	21,101	5,757,435	5,757,435
Expected landings	68,009	29,664	14,774	4,500,524	4,711,315
Overhead	20%	24%	43%	28%	22%
Model results with 30 stacked permits					
Duration				8 days	
Cumulative Limit	77,753	35,139	20,186	5,507,774	5,507,774
Expected landings				4,496,899	4,711,315
Overhead				22%	17%
Duration				7 days	
Cumulative Limit	86,054	38,890	22,341	6,095,734	6,095,734
Expected landings				4,309,769	4,711,315
Overhead				41%	29%
Model 2: (more conservative)					
with a general landings reduction of 2% but smaller landings reductions for permits not fishing in [1999:1998:1997] of (20%:10%:10%)					
Tier-specific capacity reductions	4%	15%	35%		
Model results for the 2000 fishery					
Duration				8 days	
Cumulative Limit	85,712	38,735	22,252	6,071,510	6,071,510
Expected landings	64,706	29,083	14,817	4,390,424	4,711,315
Overhead	32%	33%	50%	38%	29%
Model results with 30 stacked permits					
Duration				7 days	
Cumulative Limit	80,095	36,197	20,794	5,673,622	5,673,622
Expected landings				4,355,905	4,711,315
Overhead				30%	20%