

1.0 PRELIMINARY ANALYSES TO AID SELECTION OF FINAL ALTERNATIVES TO BE CONSIDERED IN AMENDMENT 11

This subdocument describes preliminary analyses for some of the potential alternatives recommended by the Scallop Committee for inclusion in Amendment 11. Section 1.1 is related to some of the data issues that have surfaced during analysis of preliminary alternatives. Section 1.2 is preliminary analysis of the qualification alternatives currently under consideration. Section 1.3 is related to preliminary analysis of allocation alternatives and Section 1.4 is some preliminary analyses of the limited access alternatives under general category rules.

1.1 Data Issues

During development of this action several data issues have been identified. Staff noticed that a number of general category trips were in excess of 400 pounds. The PDT identified a number of reasons these data may be above 400 pounds including multiple trips being reported together, limited access trips being miscoded as general category trips, miscoding shell stock as scallop meats, etc. Staff has been working with NMFS to fix these data errors and the data set presented below is revised from earlier data sets presented during development of this action.

The analyses presented in this section are based on revised dealer data used which have been corrected for some inaccurate data entries as reported previously. Corrections include 2000 to 2004 fishing years for the following items:

- There were 23 outlier data entries belonging to 20 unique vessels for the 2000-2004 fishing years with scallop pounds ranging from about 5,000 lb. to over 100,000 lb. from a single trip. Total scallop landings by these vessels amounted to more than 1.7 million lb. Most of these errors were due to misidentification of vessels by dealers, which resulted in recording scallop landings by limited access boats as general category landings. There were 14 such vessels (with 17 entries) with total scallop landings of 1.2 million. These 14 vessels are deleted from the data. The landings by the remaining 6 vessels included errors in entering data and recording landings in a unit other than pounds. After making these corrections, total scallop landings by this group of vessels declined from about 1.7 million pounds to 0.2 million pounds.
- In addition, there were about 90 data entries with scallop landings of more than 1200 lb. but less than 5000 lb. from a single trip. NMFS has determined that majority of these inaccuracies were due to multiple trips, data entry errors and/or errors in measurement. Since some of these errors are already corrected in the dealer data, general category scallop landings are derived again by rerunning the SQL scripts and by manually correcting some data items (18 vessels) that were not already corrected in the source data set, i.e., dealer data. There are still some data items in this category that are under review and could be revised in the future.
- After these corrections, the estimates for general category scallop landings and number of active vessels are lowered compared to the previous estimates as shown in Table 1:

Table 1. Original and revised estimates for general category scallop landings and number of active vessels

Fishyear	Original estimates (lb). (unadjusted)	Revised Landings (Number of vessels)
2000	596,459 (207 vessels)	355,964 (201 vessels)
2001	1,827,716 (279 vessels)	1,243,407 (275 vessels)
2002	1,084,806 (299 vessels)	942,802 (297 vessels)
2003	1,597,418 (327 vessels)	1,545,769 (325 vessels)
2004	3,402,943 (427 vessels)	2,741,161 (424 vessels)

Note: Scallop landings for 2004 up to the control date (inclusive) amount to 2,311,496 lb. for 374 active vessels after making the corrections discussed above.

- The corrections to the dealer data are not finalized yet since there are several data entries with scallop landings up 1200 lb. per trip. NMFS is presently reviewing these data items and comparing the records from dealer data with the VTR in order to determine whether these entries were due to multiple trips or data errors. Therefore, it is possible that general category landings estimates could be lowered further after this review. However, this reduction is not expected to be as large as the reduction after making corrections to the outlier entries discussed above.
- These numbers should be interpreted with caution since there could be some trip landings by general category vessels not recorded in the dealer data. In addition, some general category vessels could have been misidentified by dealers and their landings could have been recorded as limited access landings (since such errors occurred in reverse with the limited access boats as explained above). In such case, total scallop landings by general category vessels could be higher than estimated above. Since the data for the limited access vessels are not reviewed yet, the historical share of the general category vessels in total scallop landings could not be estimated with certainty at this time.

1.2 Preliminary Analyses of the Qualification Alternatives

The number of vessels that could qualify for a limited access general category permit is shown below for the two qualification criteria alternatives. The impacts of the qualification alternatives are examined here using an individual allocation method based on the best year of landings as an example. The number of qualifiers will be the same if allocation is based on an average of best 3 years or a weighted average of landings for 5 year and 2 year periods. Total scallop landings for the qualifiers will also stay the same if allocation methods are implemented to determine the share of individual participants rather than the absolute amount of TAC allocated to the general category (which is not being considered). It is understood that all allocations will be scaled based on a vessels contribution to the general category fishery during the qualification time period selected.

Table 2 shows that the number of qualifiers will be less (370 vessels for 5 year period) with the 1000 lb. criteria compared to 100lb. criteria (550 vessels 5 year period). However, the change in scallop landings, or the share of the individual vessels will not be impacted significantly using one criterion versus another. A qualification criteria based on a shorter period, such as the two year period shown in the lower part of Table 2 will reduce the number of participants significantly to 277 vessels for the 1000 lb. criteria and to 400 vessels for the 100 lb. criteria.

Table 2. Number of qualifying vessels and estimated landings based on an individual allocation system and best year of landings during the specified time period

Time period	Qualification Criteria	Qualified	Number of vessels	Total scallop landings (lb., Best year)	Avg. Scallop landings per vessel (lb., best year)
2000-04 (Up to and including the control date)	1000 lb. Criteria	NO	309	93,492	303
		YES	370	3,811,538	10,301
	100 lb. Criteria	NO	129	12,397	96
		YES	550	3,892,634	7,078
Total number of vessels			679		
2003-04 (Up to and including the control date)	1000 lb. Criteria	NO	206	64,605	314
		YES	277	2,757,369	9,954
	100 lb. Criteria	NO	83	7,888	95
		YES	400	2,814,086	7,035
Total number of vessels			483		

Three alternatives are being considered for determining a vessels contribution, or amount they will be allocated based on historical landings. The first alternative is based on a vessels best year, the second alternative is an average of their three best years (if they did not fish for a particular year zero is used in the average), and the third alternative is a weighted alternative that gives higher weight to more recent years. For example, landings from 2004 are multiplied by 1.0, 2003 landings by 0.9, and 2003 by 0.8 etc. If a vessel did not fish in one of the years a zero is used in the weighted alternative. The tables below illustrate the impacts on individual vessel groups depending on which strategy is used for the two qualification alternatives (100 pound trip and 1,000 annual) as well as the two qualification time periods (FY2000-control date and FY2003-control date). All these tables have been scaled to 4.0 million pounds as an example. Obviously, this TAC will be adjusted based on the projected TAC and the percent allocation the Council selects to allocate to the general category sector (2.5-11%).

The following tables provide some initial analysis of the impacts on different vessel groups, defined by annual landings and years active. Table 3 summarizes the difference between the three “determination of allocation amounts” alternatives for the 100 pound trip qualification alternative and the FY2000-control date qualification time period alternative. Table 4 summarizes the same information for the 100 pound trip alternative but for the shorter qualification time period of FY2003-control date. Table 5 and Table 6 summarize the difference between the three determination of allocation amounts for the 1,000 annual pound criterion for both time periods FY2000-control date and FY2003-control date, respectively. According to the preliminary analysis, the impacts of each strategy vary depending in what vessel group a vessel is in.

Table 3 – Summary of allocation determination alternatives for the 100 pound trip qualification alternative and the FY2000-control date qualification time period alternative (scaled to an allocation of 4.0 million pounds)

Vessel Group (Annual lb./ years active)	Number of vessels (avg. landings based on best year)	Best 3 years	Best year	Weighted
A (<1,000 / 1-2yr)	132 (436)	318	448	298
B (<1,000 / 3-5yr)	49 (519)	679	534	667
C (1,000-9,999 / 1-2 yr)	151 (3,274)	2,394	3,364	2,297
D (1,000-9,999 / 3-5yr)	95 (3,781)	4,339	3,886	4,270
E (>10,000 / 1-2 yr)	58 (21,308)	17,586	21,895	17,601
F (>10,000 / 3-5yr)	65 (26,465)	32,785	27,195	33,149
TOTAL	550 vessels			

Table 4 - Summary of allocation determination alternatives for the 100 pound trip qualification alternative and the FY2003-control date qualification time period alternative (scaled to an allocation of 4.0 million pounds)

Vessel Group (Annual lb./ years active)	Number of vessels (avg. landings based on best year)	Best 3 years	Best year	Weighted
A (<1,000 / 1-2yr)	78 (468)	487	666	500
B (<1,000 / 3-5yr)	46 (479)	690	681	678
C (1,000-9,999 / 1-2 yr)	97 (3,223)	3,350	4,582	3,406
D (1,000-9,999 / 3-5yr)	85 (3,729)	5,158	5,300	4,993
E (>10,000 / 1-2 yr)	28 (20,095)	20,888	28,564	23,381
F (>10,000 / 3-5yr)	66 (23,685)	39,122	33,667	38,188
TOTAL	400 vessels			

Table 5 - Summary of allocation determination alternatives for the 1,000 annual pound qualification alternative and the FY2000-control date qualification time period alternative (scaled to an allocation of 4.0 million pounds)

Vessel Group (Annual lb./ years active)	Number of vessels (avg. landings based on best year)	Best 3 years	Best year	Weighted
C (1,000-9,999 / 1-2 yr)	152 (3,265)	2,431	3,426	2,332
D (1,000-9,999 / 3-5yr)	95 (3,781)	4,421	3,968	4,346
E (>10,000 / 1-2 yr)	58 (21,308)	17,918	22,361	17,918
F (>10,000 / 3-5yr)	65 (26,465)	33,403	27,774	33,746
TOTAL	370 vessels			

Table 6 - Summary of allocation determination alternatives for the 1,000 annual pound qualification alternative and the FY2003-control date qualification time period alternative (scaled to an allocation of 4.0 million pounds)

Vessel Group (Annual lb./ years active)	Number of vessels (avg. landings based on best year)	Best 3 years	Best year	Weighted
C (1,000-9,999 / 1-2 yr)	98 (3,209)	3,393	4,655	3,452
D (1,000-9,999 / 3-5yr)	85 (3,729)	5,247	5,409	5,080
E (>10,000 / 1-2 yr)	28 (20,095)	21,248	29,151	23,786
F (>10,000 / 3-5yr)	66 (23,685)	39,796	34,359	38,848
TOTAL	277 vessels			

1.3 Preliminary analyses of the allocation alternatives

The impacts of the various alternatives on allocation methods for an average vessel are described in Table 7 for various qualification amount alternatives. Total landings (unscaled, column A) and pounds for an average vessel (unscaled, column B) are shown below according to whether qualification amount is based on average of best 3 years, best year or a weighted average of landings. Actual allocation per vessel will be determined, however, not from pounds per vessel, but according to the percentage share of each vessel in total scallop pounds (average % share shown in column B in parentheses). For example, if a vessel’s landings equal to the average pounds shown in column B of Table 7 for each qualification criteria, that vessel would get 0.27% (0.36%) of general category TAC if the 1000 lb. qualification criteria and 5-year (2-year) period is applied for qualification. The percentage share of each individual vessel will differ from this average percentage share depending on baseline pounds that vessel is qualified for and depending on whether an individual allocation scheme is implemented. Percentage share of each vessel will be smaller if the 100 lb. criterion is used since more vessels would qualify under this alternative.

If it is assumed that total general category TAC is 4 million lbs. as an example, allocation for an average vessel will be about 10,811 lb. with the 1000 lb. qualification criterion and 5 year period, and 7,273 lb. with the 100 lb. qualification criteria whether it is based on average of best 3 years, best year or a weighted average of landings (See Columns C and D). Allocations per vessel qualified for limited access will be larger if qualification period was 2 years (2003-2004) since the number of participants will be less with this alternative. Although, allocation amounts for an average vessel will be equivalent for each qualification amount alternative, each individual vessel will receive a different allocation with each alternative under an individual allocation system (See Table 3 through Table 6 above). Therefore, the distributional impacts of these alternatives will not be uniform across vessels.

Table 7. Average allocation per vessel with various qualification amount alternatives assuming a total general category TAC of 4 million lb.

Qualification Criteria/Time period	Qualification amount	(Column A) Total Scallop landings (Unscaled)	(Column B) Pounds and % share per vessel (unscaled average)	(Column C) Total general category TAC (lb.)	(Column D) Allocation per vessel (scaled average)
5 year period: from 2000 - 2004 (on or before CD)					
1000 lb. Criteria 370 vessels qualify	Average of best 3 years	1,988,142	5,373 (0.27%)	4,000,000	10,811
	Best Year	3,811,538	10,301 (0.27%)	4,000,000	10,811
	Weighted average *	1,357,506	3,669 (0.27%)	4,000,000	10,811
100 lb. Criteria 550 vessels qualify	Average of best 3 years	2,025,629	3,683 (0.18%)	4,000,000	7,273
	Best Year	3,892,634	7,078 (0.18%)	4,000,000	7,273
	Weighted average *	1,381,918	2,513 (0.18%)	4,000,000	7,273
2 year period: from 2003 - 2004 (on or before CD)					
1000 lb. Criteria 277 vessels qualify	Average of best 3 years	1,891,522	6,828 (0.36%)	4,000,000	14,440
	Best Year	2,757,369	9,954 (0.36%)	4,000,000	14,440
	Weighted average **	1,957,904	7,068 (0.38%)	4,000,000	14,440
100 lb. Criteria 400 vessels qualify	Average of 2 years	1,924,119	4,810 (0.25%)	4,000,000	10,000
	Best Year	2,814,086	7,035 (0.25%)	4,000,000	10,000
	Weighted average **	1,991,957	4,979 (0.25%)	4,000,000	10,000

*Weights: 2004=1, 2003=0.9, 2002=0.8, 2001=0.7, 2000=0.6

** Weights: 2004=1, 2003=0.7;

If allocations were based on a 3-tiered permit system, however, each vessel that qualifies for a certain tier would get an equal allocation (See 1.1.2.4.3). Table 8 shows number of vessels, average pounds and allocations per vessel with a 4 million general category TAC as an example. While, a tiered allocation system will benefit vessels with landings below their group average, the vessels with higher landings than average will incur a loss in their scallop revenues with this allocation method.

An individual quota system based for two permit types, full-time and part-time vessel categories, will have similar impacts on vessels in the full-time category (same as Tiers 1 and 2 in Table 8), but could have negative impacts on part-time vessels (same as Tier 3 in Table 8) because of a lower possession limit, 200 lb., per trip.

Table 8. Allocation for vessels with a three tiered permit system (Based on best-year of landing)

Qualification Criteria/Time period	Qualification amount	(TIER 1) 20,000 lb. or higher	(TIER 2) 5,000-19,999 lb.	(TIER 3) 100-4,999 lb.	TOTAL
5 year period: from 2000 - 2004 (on or before CD)					
1000 lb. Criteria 370 vessels qualify	Number of vessels	63	123	184	370
	Pounds per vessel (best year unscaled, total 3.8 mil. lb.)	33320	10508	2282	10301
	Allocation per vessel (scaled average, TAC=4 mill. lb)	34968	11028	2394	10811
100 lb. Criteria 550 vessels qualify	Number of vessels	63	123	364	550
	Pounds per vessel (best year unscaled, total 3.9 mil. lb.)	33320	10508	1376	7078
	Allocation per vessel (scaled average, TAC=4 mill. lb.)	34239	10798	1414	7273
2 year period: from 2003 - 2004 (on or before CD)					
1000 lb. Criteria 277 vessels qualify	Number of vessels	44	97	136	277
	Pounds per vessel (best year unscaled, total 2.7 mil. lb.)	31772	10828	2273	9954
	Allocation per vessel (scaled average, TAC=4 mill. lb)	46090	15708	3297	14440
100 lb. Criteria 400 vessels qualify	Number of vessels	44	97	259	400
	Pounds per vessel (best year unscaled, total 2.8 mill.lb.)	31772	10828	1412	7035
	Allocation per vessel (scaled average, TAC=4 mill. lb.)	45161	15391	2008	10000

Allocation pounds will also vary according to the total TAC allocated to general category fleet, the qualification criteria and time-period for qualification as shown in Table 9 and Table 10. For example, if it is assumed that the total TAC is 50 million pounds and the general category fleet is allocated 10% of that TAC that would equal a 5 million allocation for that sector of the fleet. These tables are also useful for comparing the average scallop pounds per qualifying vessel for the two qualification alternatives (100 lb. trip and 1000 annual pounds), as well as comparing the two qualification time period alternatives.

Table 9. Average allocation quantities for 5 year period (2000-2004 until control date) qualification

Total Scallop TAC (lb.)	General category TAC as a % of Total TAC	General category TAC (lb.)	100 lb. Criteria (550 vessels)	1000 lb. Criteria (370 vessels)
			Avg. Scallop lb. per vessel	Avg. Scallop lb. per vessel
40,000,000	2.50%	1,000,000	1,818	2,703
40,000,000	5%	2,000,000	3,636	5,405
40,000,000	7%	2,800,000	5,091	7,568
40,000,000	10%	4,000,000	7,273	10,811
40,000,000	11%	4,400,000	8,000	11,892
50,000,000	2.50%	1,250,000	2,273	3,378
50,000,000	5%	2,500,000	4,545	6,757
50,000,000	7%	3,500,000	6,364	9,459
50,000,000	10%	5,000,000	9,091	13,514
50,000,000	11%	5,500,000	10,000	14,865
60,000,000	2.50%	1,500,000	2,727	4,054
60,000,000	5%	3,000,000	5,455	8,108
60,000,000	7%	4,200,000	7,636	11,351
60,000,000	10%	6,000,000	10,909	16,216
60,000,000	11%	6,600,000	12,000	17,838
70,000,000	2.50%	1,750,000	3,182	4,730
70,000,000	5%	3,500,000	6,364	9,459
70,000,000	7%	4,900,000	8,909	13,243
70,000,000	10%	7,000,000	12,727	18,919
70,000,000	11%	7,700,000	14,000	20,811

Table 10. Average allocation quantities for 2year period qualification (2003-2004 until control date)

Total Scallop TAC (lb.)	General category TAC as a % of Total TAC	General category TAC (lb.)	100 lb. Criteria (400 vessels)	1000 lb. Criteria (277 vessels)
			Avg. Scallop lb. per vessel	Avg. Scallop lb. per vessel
40,000,000	2.50%	1,000,000	2,500	3,610
40,000,000	5%	2,000,000	5,000	7,220
40,000,000	7%	2,800,000	7,000	10,108
40,000,000	10%	4,000,000	10,000	14,440
40,000,000	11%	4,400,000	11,000	15,884
50,000,000	2.50%	1,250,000	3,125	4,513
50,000,000	5%	2,500,000	6,250	9,025
50,000,000	7%	3,500,000	8,750	12,635
50,000,000	10%	5,000,000	12,500	18,051
50,000,000	11%	5,500,000	13,750	19,856
60,000,000	2.50%	1,500,000	3,750	5,415
60,000,000	5%	3,000,000	7,500	10,830
60,000,000	7%	4,200,000	10,500	15,162
60,000,000	10%	6,000,000	15,000	21,661
60,000,000	11%	6,600,000	16,500	23,827

70,000,000	2.50%	1,750,000	4,375	6,318
70,000,000	5%	3,500,000	8,750	12,635
70,000,000	7%	4,900,000	12,250	17,690
70,000,000	10%	7,000,000	17,500	25,271
70,000,000	11%	7,700,000	19,250	27,798

1.5 Preliminary analyses of limited access alternatives

Currently limited access scallop vessels are permitted to fish for scallops under general category rules while not fishing on a scallop DAS. They are restricted to 400 pounds per trip. Table 6 describes the number of limited access vessels and their scallop landings under general category trips. Note that these tables are based on data that have not been revised yet; therefore, may change as the data set is refined. Amendment 11 is considering several alternatives related to limited access fishing under general category rules. One alternative would prevent it entirely, one would permit it, but only for limited access vessels that qualify under the same criteria as general category vessel, and one alternative would only permit part-time and occasional vessels to qualify and prevent full-time vessels from fishing under general category rules. Of the 211 vessels limited access vessels that fished under general category rules from 2000-2004, only about 176 of them would potentially qualify under the 100 pound qualification criteria (Table 11 and Table 12). Of the 176 potential qualifiers, about 25 of them have a part-time permit and 7 have an occasional permit.

Table 11 Characteristics of general category trips by limited access vessels during 2000-04 fishing years (General category trips are defined as those trips with scallop landings of less than or equal to 400 lb.)

Data	Full-time	Part -Time	Occasional	Grand Total
Number of Vessels	174	28	9	211
Scallop pounds per vessel (maximum of 2000 -04)	1,462	6,615	947	2,124
Min. scallop pounds per vessel	<10	<50	<30	<10
Max. scallop pounds per vessel	~20,000	~50,000	~3,000	~50,000
Number of limited access trips (average per vessel)	26	15	1	24
Number of general category trips (average per vessel)	5	20	8	7
Total pounds based on the best year landings during 2000-05	254,383	185,209	8,524	448,116
% of total scallop landings (sum of landings for 2000-04)	48.0%	50.5%	1.5%	100.0%

Table 12. Characteristics of general category trips by limited access vessels with scallop landings of 100 lb. or more during 2000-04 fishing years (General category trips are defined as those trips with scallop landings of less than or equal to 400 lb.)

Data	Full-time	Part -Time	Occasional	Grand Total
Number of Vessels	144	25	7	176
Scallop pounds per vessel (maximum of 2000 -04)	1,755	7,402	1,184	2,534
Min. scallop pounds per vessel	~130	~200	~120	~120
Max. scallop pounds per vessel	~20,000	~50,000	~3,000	~50,000
Number of limited access trips (average per vessel)	29	17	1	26
Number of general category trips (average per vessel)	6	22	9	8
Total pounds based on the best year landings during 2000-05	252,741	185,039	8,286	446,066
% of total scallop landings (sum of landings fro 2000-04)	47.9%	50.6%	1.5%	100.0%

Table 13. Number of limited access vessels grouped by their general category landings from the best year during 2000-04.

Scallop pounds per vessel (MAX. of 2000-04)	Full-time	Part -Time	Occasional	Grand Total
<100 lb.	27	NA	NA	31
100-4999 lb.	135	18	8	161
5000-19999	12	4		16
>=20000		NA		NA
Grand Total	174	28	9	211