



Mid-Atlantic Fishery Management Council

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MEMORANDUM

Date: October 27, 2017
To: Demersal Committee
From: Kiley Dancy, Staff
Subject: Commercial Allocation Options for the Summer Flounder Fishery

Introduction

At the August 2017 joint meeting of the Mid-Atlantic Council and the Atlantic States Marine Fisheries Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board), the groups moved to retain commercial allocation options for consideration in the document, with the understanding that additional development of appropriate options would be needed prior to approval of a range of alternatives for public hearings.

As such, staff, in cooperation with several Fishery Management Action Team members, have prepared a draft list of commercial allocation options for Committee consideration. These options represent a range that staff believe could address Council and Board concerns related to allocation issues.

The objectives of the Committee discussion at the November 8-9 meeting are:

- Review the draft commercial allocation alternatives presented below and decide if these options are appropriate for inclusion in a public hearing document;
- Identify any additional alternatives that should be included in a public hearing document.

MSA Allocation Considerations

Summarized below are the Magnuson Stevens Act National Standards that the Committee, and ultimately the Council and Board, should consider in allocation decision making.

Language relevant to allocation decisions is found in National Standards (NS) 1 (optimum yield), 4 (allocation), 5 (economic efficiency), and 8 (communities).¹

¹ The intersection of allocation decisions with these National Standards is described in more detail in: Morrison, W.E., T.L. Scott. 2014. Review of Laws, Guidance, Technical Memorandums and Case Studies Related to Fisheries Allocation Decisions. U.S. Dept. of Commer., NOAA. NOAA Technical Memorandum NMFS-F/SPO-148, 32 p. Available at http://www.nmfs.noaa.gov/sfa/management/allocation/morrison_scott_allocation_report.pdf

National Standard 1: “Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.” The determination of OY is a decisional mechanism for resolving the MSA's conservation and management objectives, and balancing the various interests that comprise the greatest overall benefits to the Nation.

National Standard 4: “Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be (A) fair and equitable to all such fishermen; (B) reasonably calculated to promote conservation; and (C) carried out in such manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.”

Stakeholder interpretation of "fair and equitable" varies, and the MSA does not prescribe how the fairness of an allocation should be assessed. In addressing the fairness of an allocation, the regulations state that the allocations should be "rationally connected to the achievement of OY or with the furtherance of a legitimate FMP objective," and also that allocations may impose a hardship on one group if it is outweighed by the total benefits received by another group or groups. The preservation of the status quo is not required to satisfy the standard of "fair and equitable" if a new allocation would "maximize overall benefits." (§600.325(c)(3)(i)B).

The NS4 guidelines also state that "In designing an allocation scheme, a Council should consider other factors relevant to the FMP's objectives. Examples are economic and social consequences of the scheme, food production, consumer interest, dependence on the fishery by present participants and coastal communities, efficiency of various types of gear used in the fishery, transferability of effort to and impact on other fisheries, opportunity for new participants to enter the fishery, and enhancement of opportunities for recreational fishing."

National Standard 5: “Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.”

National Standard 8: “Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.”

National standard 8 directs the Councils to apply economic and social factors towards sustained participation of fishing communities and to the extent practicable, minimize adverse economic impacts on such communities within the context of preventing overfishing and rebuilding overfished stocks as required under NS1.

Draft Commercial Allocation Options for Committee Consideration

A list of draft commercial options for potential inclusion in a public hearing document are presented below for Committee consideration. For each alternative, two examples are provided to show how the quota would be distributed: one example using the 2016 commercial quota (8.12

million pounds) and one example using a hypothetical quota of 14.00 million pounds (moderately above the time series average commercial quota of 11.80 million pounds).

Commercial allocation options will be Alternative set 2 in the public hearing document, following Permit alternatives (Alt. set 1) and preceding Landings Flexibility Framework Provision alternatives (Alt. set 3).

Alternative 2A: No Action/Status Quo

This alternative would leave in place the current state allocation percentages. Currently, the coastwide quota is divided on a percentage basis to each of the states (Maine-North Carolina) based on historical landings from the period 1980-1989² (Table 1). Each state then sets measures to achieve, but not exceed, their state-specific commercial quotas. These allocations are included in both the Council and the Commission FMPs. When a state's quota has been landed, fishing for and/or landing summer flounder is prohibited in that state. Any quota overages by a state during the year are subtracted from the state's quota the following year.

Table 1: Current state-by-state percent share of commercial summer flounder allocation as established by FMP Amendments 2 and 4, based on landings data for 1980-1989. Example state quotas are provided based on 8.12 million lb and 14.00 million lb coastwide quotas, and represent initial quotas prior to any transfers or deductions for overages.

State	Allocation (%)	Example allocation (lb) based on 8.12 million lb quota	Example allocation (lb) based on 14.0 million lb quota
ME	0.04756	3,862	6,658
NH	0.00046	37	64
MA	6.82046	553,821	954,864
RI	15.68298	1,273,458	2,195,617
CT	2.25708	183,275	315,991
NY	7.64699	620,936	1,070,579
NJ	16.72499	1,358,069	2,341,499
DE	0.01779	1,445	2,491
MD	2.03910	165,575	285,474
VA	21.31676	1,730,921	2,984,346
NC	27.44584	2,228,602	3,842,418
Total	100	8,120,001	14,000,001

Alternative 2B: Revised state-by-state allocations based on current allocations adjusted for recent biomass distribution

This alternative would establish revised state-by-state quota allocations by adjusting the current state allocations based on a regional shift in exploitable biomass derived from Northeast Fisheries Science Center (NEFSC) trawl survey data.

² Estimated landings by state and year for 1980-1989, as of the time of Amendment 2 development, can be found in Table 2 (pounds) and Table 72 (percentage) of the Amendment 2 document, available at: http://www.mafmc.org/s/SFSCBSB_Amend_2.pdf. Revised 1980-1989 landings by state and year, and the resulting quota shares from Amendment 4 can be found in Table 1 of that document, at: http://www.mafmc.org/s/SFSCBSB_Amend_4.pdf.

An NEFSC analysis calculated an approximate shift in the percentage of exploitable biomass in a Northern vs. Southern region (divided approximately at Hudson Canyon), over the ten-year time periods of 1980-1989 and 2007-2016. Calculations were based on NEFSC spring and fall trawl survey catches, length-calibrated to R/V Albatross IV (ALB) equivalents.

Because the interest is in allocating commercial landings, length cutoffs were used for summer flounder caught in the survey to focus on biomass retainable by the commercial fishery. Given that the commercial minimum size has remained at either 13 or 14 inches over the entire time series, the commercial size frequency has not shifted substantially over the time series. Thus, a 14 inch = 36 cm length cut-off was used for both time periods to capture virtually all of the commercial landings length range in both periods (and some commercial discards), to derive an index of exploitable biomass.

Survey strata were grouped into two regions divided approximately at Hudson Canyon: a Northern region with waters approximately off the states New York and north, and a Southern region with waters approximately off the states New Jersey and south.³ North and South indices were weighted by the area surveyed (NM²) to provide seasonal total indices to express the Northern percentage of the total exploitable biomass for each season and period. The seasonal (spring and fall) exploitable biomass was then summed for each region to calculate total relative biomass for each region and period. Figure 1 shows the results for trends in spring and fall relative biomass for 1980-1989 and 2007-2016.

For relative exploitable biomass averaged over each period, the Northern region percentage increased from 62% during 1980-1989 to 77% during 2007-2017, an increase of 15% relative to the Northern allocation during the first time period (Figure 2). Under Alternative 2B, this percentage change would serve as the basis for a regionally-based adjustment to the current state-by-state allocation percentages. The current commercial landings allocation gives a total of ~32.5% to the 'Northern' states (ME, NH, MA, RI, CT, NY), and a total of ~67.5% to the 'Southern' states (NJ, DE, MD, VA, NC). Increasing the Northern allocation by 15% would increase the North allocation to 37.4%, and therefore decrease the South allocation to 62.6% (a decrease of about 7% relative to the Southern allocation during the first time period). Note that this percentage increase for the Northern region is **relative to current state/regional percentages, not relative to the coastwide total** (e.g., New York would receive an approximate 15% increase relative to their current 7.65% share, which on a coastwide level results in an additional 1.16% of the total commercial quota allocated to New York. On a coastwide level, the Northern region as a whole would receive 5% more of the coastwide quota; Table 2).

This alternative would be considered a one-time indefinite change; however, the Council and Board could identify future triggers for a review of the allocation or revisiting of this decision if desired.

³ Spring survey: North = Hudson Canyon and North; offshore strata 1-12; South = south of Hudson Canyon; offshore strata 61-76. Fall survey: North = Hudson Canyon and North; offshore strata 1,5,9, inshore strata 1-14 and 45-61; South =south of Hudson Canyon; offshore strata 61,65,69,71, inshore strata 15-44.

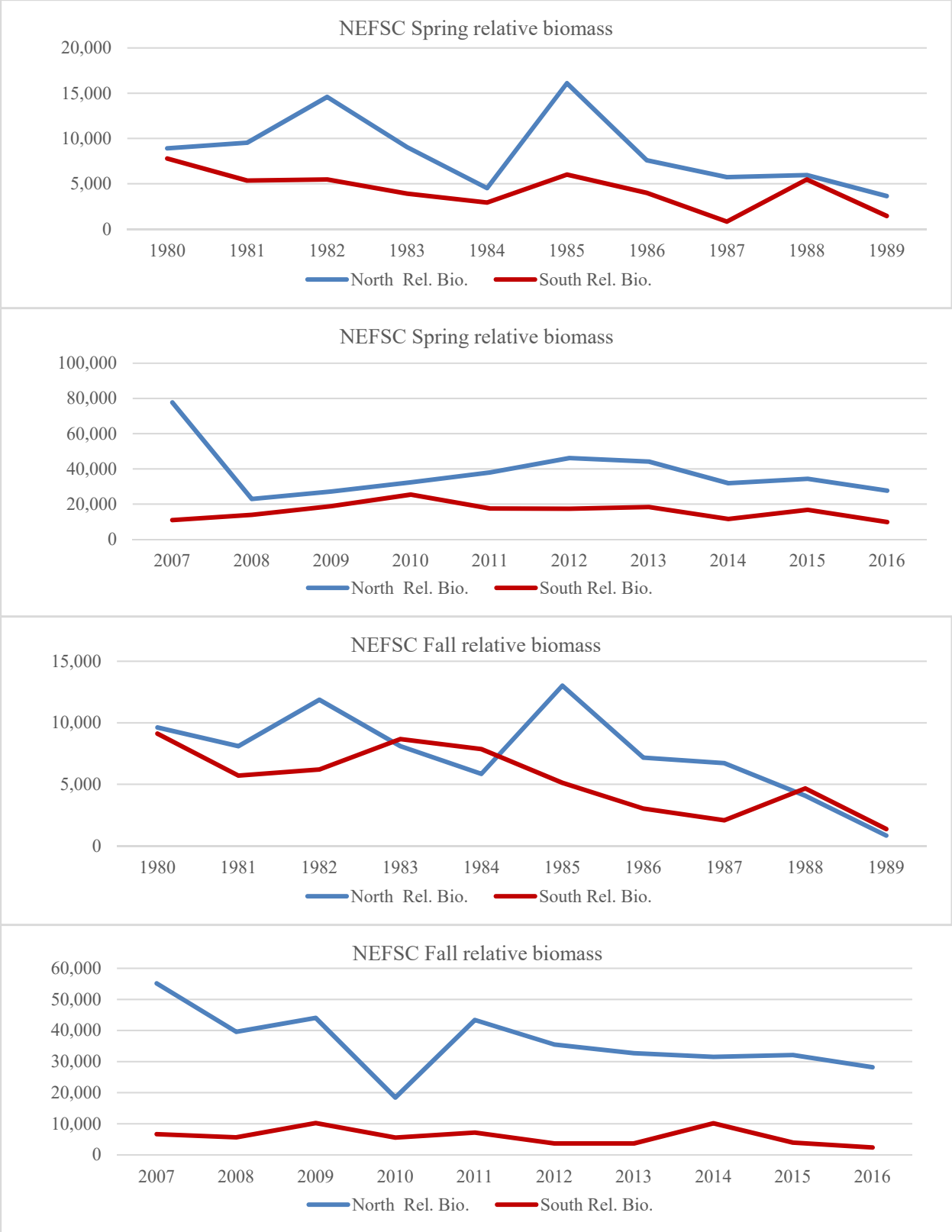


Figure 1: NEFSC spring and fall survey relative biomass for 1980-1989 and 2007-2016; relative to area surveyed.

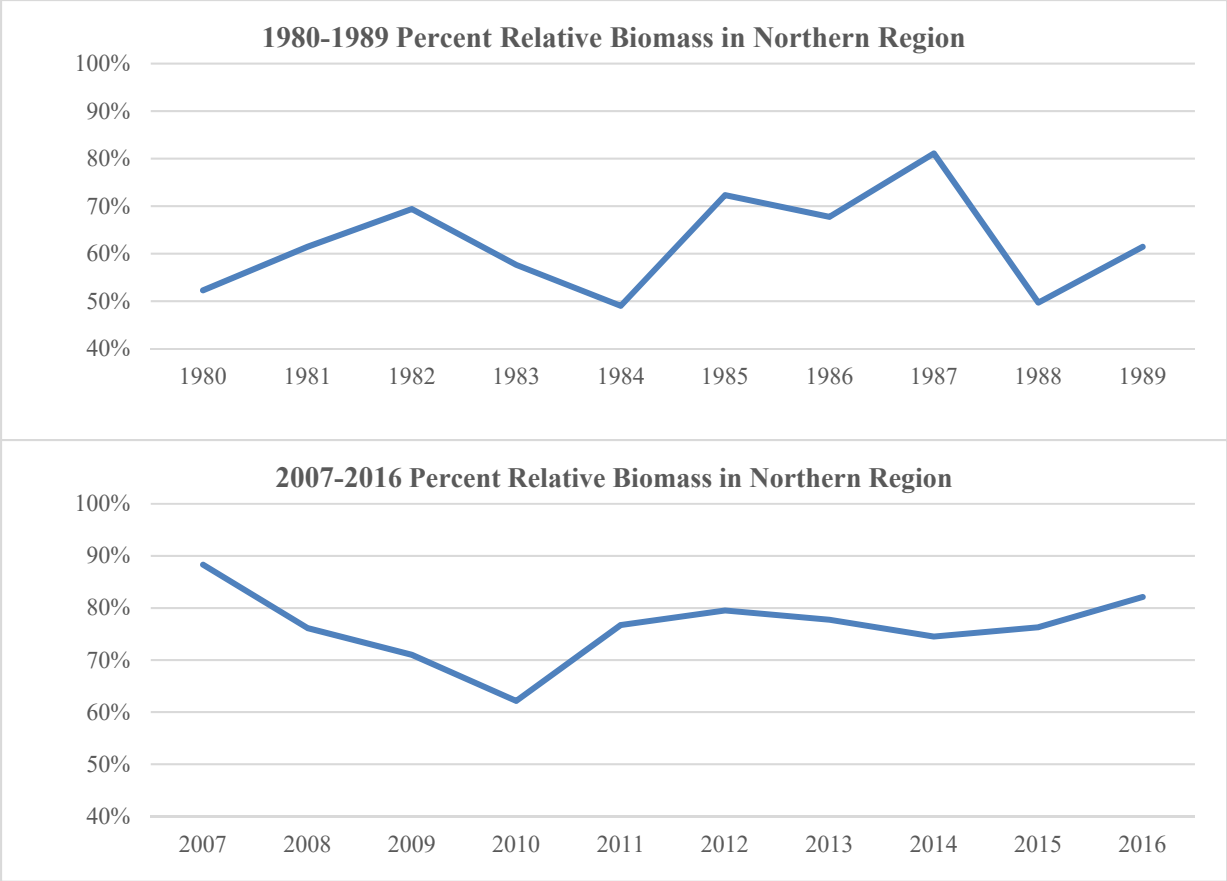


Figure 2: NEFSC survey relative biomass annual percent in Northern region, 1980-1989 and 2007-2016. The remaining relative biomass is attributable to the Southern region.

Table 2: Allocation calculation under Alternative 2B, based on increasing the percentage of allocation distributed to the Northern region by 15%. Example state quotas are provided based on 8.12 million lb and 14.00 million lb coastwide quotas, and represent initial quotas prior to any transfers or deductions for overages.

State	A) Status quo state allocation (%)	B) Status quo % of regional allocation	C) Status quo state % of regional total (N or S)	D) Revised regional allocation with 15% increase to N states	E) Revised state allocation under Alt 2B ^a	F) % Change relative to existing state allocation	G) % Change relative to total coastwide allocation	H) Example allocation (lbs) based on 8.12 million lb quota	I) Example allocation (lbs) based on 14.00 million lb quota
ME	0.04756	32.50	0.14654%	37.40	0.05481	15.23460%	0.00725%	4,450	7,673
NH	0.00046		0.00142%		0.00053	15.23460%	0.00007%	43	74
MA	6.82046		21.01479%		7.85953	15.23460%	1.03907%	638,194	1,100,334
RI	15.68298		48.32144%		18.07222	15.23460%	2.38924%	1,467,464	2,530,111
CT	2.25708		6.95438%		2.60094	15.23460%	0.34386%	211,196	364,131
NY	7.64699		23.56144%		8.81198	15.23460%	1.16499%	715,533	1,233,677
NJ	16.72499	67.50	24.76145%	62.60	15.50067	-7.32033%	-1.22432%	1,258,654	2,170,093
DE	0.01779		0.02634%		0.01649	-7.32033%	-0.00130%	1,339	2,308
MD	2.0391		3.01890%		1.88983	-7.32033%	-0.14927%	153,454	264,576
VA	21.31676		31.55959%		19.75630	-7.32033%	-1.56046%	1,604,212	2,765,882
NC	27.44584		40.63373%		25.43671	-7.32033%	-2.00913%	2,065,461	3,561,140
Total	100	100	--	100	100		0	8,120,000	14,000,000

^a Column E calculated by applying the *status quo* state percentage of regional allocation (column C) to the revised regional allocation with a 15% increase to the Northern states (column D).

Alternative 2C: Revised state-by-state allocations based on a commercial quota-based trigger

This alternative would implement a coastwide commercial-quota based trigger point for modifying state-by-state allocations. The allocations would remain *status quo* until the annual coastwide quota in a given year exceeded 11.80 million pounds (the time series average commercial quota 1993-2018).⁴ In years where the specified commercial quota exceeded this amount, the "additional" quota would be distributed differently, as described below. If in future years the specified quota were at or below this trigger point, the quota allocation would revert to *status quo* (1980-1989 basis). The commercial quota in each year would still be developed based on the recommendations of the SSC and Monitoring Committee, and approved by the Council and Board based on the Council's risk policy.

Under this alternative, the **additional** quota above 11.80 million pounds would be evenly distributed to each state from Maine to North Carolina, with the caveat that states with less than 1% of the current commercial quota allocation (Delaware, New Hampshire, and Maine) would split a single state's share. This would result in nine quota shares with North Carolina, Virginia, Maryland, New Jersey, New York, Connecticut, Rhode Island, and Massachusetts each getting a share of the "additional" quota (11.11% each of the **additional** quota beyond 11.80 million pounds, on top of their **current quota share of the baseline quota** of 11.80 million pounds) and Delaware, New Hampshire, and Maine splitting a state share (3.7% each of the additional quota).

In the hypothetical example in Table 3 below, under an 8.12 million pound coastwide quota, the quota would be distributed the same way it is currently (*status quo*; Alternative 2A). Under a hypothetical 14.00 million pound coastwide quota, the additional quota would be 2.20 million pounds (14.00-11.80 = 2.20). In this case, the first 11.80 million pounds would be distributed based on *status quo* allocations, and the additional 2.20 million pounds would be distributed such that the states of North Carolina, Virginia, Maryland, New Jersey, New York, Connecticut, Rhode Island, and Massachusetts would each receive an additional 244,420 pounds of quota that year (11.11% of 2.20 million pounds) and Delaware, New Hampshire, and Maine would each receive an additional 81,400 pounds (3.7% of 2.20 million pounds; Table 3). Under this alternative, the "new" total allocation percentages by state could not be calculated until the annual commercial quota was known (typically established in August of any given year), as the state percentages of the coastwide allocation would vary depending on how much "additional" quota was available to be distributed.

⁴ Other time period options were considered, including a 5-year average (8.40 mil lb), 10-year (10.71 mil lb), 15-year (11.65 mil lb), and 20-year average (11.74 mil lb). Because the 15-year, 20-year, and time series average (11.80 mil lb) were very similar, the time series was chosen for simplicity and to capture the largest range of historical quotas.

Table 3: Allocation under alternative 2C, with modified distribution of additional coastwide commercial quota beyond 11.80 million pounds. Hypothetical quota examples represent initial quotas prior to any transfers or deductions for overages.

State	Allocation (%) of baseline quota up to and including 11.80 million lb	Allocation (%) of additional quota beyond 11.80 million lb	Example allocation (lbs) based on 8.12 million lb quota ^a	Example allocation (lbs) based on 14.00 million lb quota ^b			Comparison to <i>Status quo</i>
				<i>Status Quo</i> distribution of 11.80 mil lb base quota	<i>New distribution</i> of 2.20 mil lb additional quota	<i>Total quota</i> under 14.00 lb CQ	<i>Status quo</i> allocation under a 14.00 million lb quota
ME	0.04756	3.70	3,862	5,612	81,400	87,012	6,658
NH	0.00046	3.70	37	54	81,400	81,454	64
MA	6.82046	11.10	553,821	804,814	244,420	1,049,234	954,864
RI	15.68298	11.10	1,273,458	1,850,592	244,420	2,095,012	2,195,617
CT	2.25708	11.10	183,275	266,335	244,420	510,755	315,991
NY	7.64699	11.10	620,936	902,345	244,420	1,146,765	1,070,579
NJ	16.72499	11.10	1,358,069	1,973,549	244,420	2,217,969	2,341,499
DE	0.01779	3.70	1,445	2,099	81,400	83,499	2,491
MD	2.03910	11.10	165,575	240,614	244,420	485,034	285,474
VA	21.31676	11.10	1,730,921	2,515,378	244,420	2,759,798	2,984,346
NC	27.44584	11.10	2,228,602	3,238,609	244,420	3,483,029	3,842,418
Total	100	100	8,120,001	11,800,000	2,200,000	14,000,000	6,658

^a Allocation is divided based on *status quo* allocation percentages due to coastwide quota being lower than 11.80 million pounds. This hypothetical quota results in the same quota distribution as in Alternative 2A.

^b Allocation of first 11.80 million pounds is divided based on *status quo* allocation percentages. Additional 2.20 million pounds (14.00-11.80) is divided evenly between all states except NH, DE, and ME, which split a single share.

Alternative 2D: "Scup Model" System

This alternative would allocate the annual summer flounder quota into three unequal periods, similar to the way the commercial scup fishery is currently managed. In the two winter periods, January-April (Winter I) and November-December (Winter II), a coastwide quota system would be implemented in conjunction with a system of coastwide landings limits or other measures to constrain landings to the seasonal allocation.

In the Summer period, May-October, a state-by-state quota system similar to the current state-by-state system (but with different allocations) would be implemented. Summer quota shares would be managed by individual states, which would be responsible for implementing appropriate possession limits and other management measures. Any quota overages by a state during the summer period would be subtracted from the state's share the following year. States would be allowed to transfer or combine quotas.

A coastwide system during the winter periods would allow fishermen to land in any port along the coast. All commercial landings during the winter period would count toward that quota for that period. When the period quota has been landed, fishing for and/or landing summer flounder would be prohibited for the remainder of the period. Landings in excess of the allocation for the period would be subtracted from the following year's quota for the same period.

This system ensures that both smaller vessels, which typically operate near shore in the summer months, and larger vessels, which typically operate offshore in the winter months, have access to fish before the annual quota is reached.

Proposed Configuration

The major decision points regarding configuration of the "scup model" allocation system for summer flounder include: the timing of each quota period, the basis for allocation of the commercial quota among the three seasonal periods, the basis for allocation of the summer period quota among states, and the process for development of associated management measures (possession limits, rollover provisions, etc.).

Timing of the quota periods is proposed to be the same configuration as used for scup, prior to the pending modification approved by the Council and Board in May 2017. This includes a Winter I period of January 1-April 30, a Summer period of May 1 -October 31, and a Winter II period of November 1-December 31. October is proposed to be in the Summer period based on feedback from advisors as well as initial analysis indicating that the characteristics of the October summer flounder fishery generally align more with the summer fishery in terms of area fished (state vs. federal waters), vessel tonnage, and gear types used. Additional information on this conclusion is provided in **Appendix I**. The division of the winter season into two quota periods (Winter I and Winter II) is necessary given that each new quota year begins on January 1.

Allocation between quota periods is proposed to be based on landings by period over the past 20 years (1997-2016). Table 4 indicates that during this time period, summer flounder landings have been distributed as follows: 54.68% from January through April, 28.28% from May through October, and 17.04% from November through December. Past state-level seasonal regulations (e.g., closures, possession limits) are not explicitly accounted for in this analysis.

Table 4: Percentage of commercial summer flounder landings by proposed quota periods, 1997-2016. Data source: NMFS dealer data (AA tables) as of May 2017.

	Winter I (Jan 1-Apr 30)	Summer (May 1-Oct 31)	Winter II (Nov 1 -Dec)	Total
1997	58.50%	40.54%	0.97%	100.0%
1998	50.80%	28.08%	21.12%	100.0%
1999	56.26%	28.92%	14.82%	100.0%
2000	56.96%	26.65%	16.39%	100.0%
2001	51.00%	25.57%	23.43%	100.0%
2002	53.35%	27.24%	19.41%	100.0%
2003	52.89%	26.95%	20.16%	100.0%
2004	52.14%	25.85%	22.02%	100.0%
2005	58.19%	25.64%	16.16%	100.0%
2006	56.56%	26.70%	16.74%	100.0%
2007	59.76%	31.72%	8.52%	100.0%
2008	55.51%	28.49%	16.00%	100.0%
2009	51.48%	29.83%	18.68%	100.0%
2010	50.05%	29.36%	20.59%	100.0%
2011	56.98%	27.94%	15.09%	100.0%
2012	53.62%	29.94%	16.44%	100.0%
2013	58.05%	25.70%	16.24%	100.0%
2014	54.03%	29.04%	16.93%	100.0%
2015	52.08%	29.53%	18.40%	100.0%
2016	56.90%	29.21%	13.89%	100.0%
Average	54.68%	28.28%	17.04%	100.0%

The commercial fishery would close coastwide (in federal and state waters) when the allocation for a given Winter period is projected to be reached. The Regional Administrator would close the EEZ to fishing for summer flounder by commercial vessels when the quota has been landed, and states would be responsible for state waters closures.

Quota rollover provisions are proposed similar to those in place for the scup fishery. If the full Winter I quota is not harvested, unused quota would be added to the quota for the Winter II period. Quota is unable to be rolled over from one fishing year to the next under the Council's current risk policy.⁵

Coastwide possession limits would be necessary during the two winter periods to ensure the quota period allocation is not exceeded, to maintain a continuous supply of summer flounder to the market throughout the period, and to discourage derby-style fishing practices that would allow the quota to be landed quickly by larger, more mobile vessels at the beginning of each period. Different landings limits could be implemented during each period and could change over a single period as landings approach the seasonal quota (e.g., when 85% of the quota has been landed, the coastwide possession limits would decrease to slow landings and prevent the period quota from being

⁵ See page 19 of <http://www.mafmc.org/s/Commercial-Range-of-Alts-Discussion-Doc-4-May-2017.pdf>

exceeded). The coastwide possession limits would be recommended or reviewed by the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee (MC) annually, accounting for changes in the fishery and the annual quota. These recommendations would then need to be adopted by the Council and Board each fall during the annual specifications process.

It may be difficult to develop coastwide landings limits that are acceptable to a wide variety of participants (e.g., larger and smaller vessels) that still constrain landings to the period quota. In addition, moving toward coastwide quota periods in the winter may not account for seasonal variations in abundance of summer flounder as well as changes in the size of vessels that harvest them. These systems have been designed to allow for an equitable allocation of the state quota to all commercial fishermen landing summer flounder in each state. It will be challenging to develop a coastwide system that provides an equitable distribution of the quota to northern and southern participants as well as between smaller day boats and larger offshore vessels. Uniform landings limits may not be suitable for all vessels, gears, or areas. A system to revise possession limits mid-season will also need to take into account the administrative costs of notifying permit holders, especially if limits change multiple times per season.

State-by-state summer period allocations would be needed for the months of May-October. Commercial landings during the summer period would count toward each state's individual summer period quota, and states would be responsible for closing their waters once a state quota for the summer period is reached or projected to be reached. The current (1980-1989 basis) state-by-state allocations for summer flounder would not be appropriate to apply only to the summer months, given that these allocations were based on full years of fishing activity without regard for the varying seasonality of each individual state's fishery. Instead, quota allocations should consider the relative importance of the summer fishery, which is primarily a state waters fishery, and the associated fleet from each state.

Summer period quotas under this alternative are proposed to be allocated to each state based on the percentage contribution of each state's summer period (May-October) landings over the period 1997-2016. These proposed state specific summer quota period shares are specified in Table 5.

Table 5: Percentage of coastwide commercial summer flounder landings by state, May-October, 1997-2016.

State	% of Coastwide Summer Period Landings, 1997-2016
ME	0.01%
NH	0.00%
MA	18.53%
RI	21.54%
CT	3.42%
NY	17.78%
NJ	28.43%
DE	0.04%
MD	4.17%
VA	5.41%
NC	0.67%
Total	100.00%

Table 6: Summary of proposed allocation configuration of Alternative 2D, with examples using hypothetical coastwide quotas at 8.12 million lb and 14.00 million lb.

Quota Period	Allocation %	Measures	Example allocation (lbs) based on 8.12 million lb quota	Example allocation (lbs) based on 14.00 million lb quota			
Winter I (January 1- April 30)	54.68%	Coastwide	4,440,016	7,655,200			
Summer (May 1- October 31)	28.28%	State- specific	2,296,336	3,959,200			
<i>State-specific summer allocations</i>	ME		0.01%	ME	230	ME	396
	NH		0.00%	NH	0	NH	0
	MA		18.53%	MA	425,511	MA	733,640
	RI		21.54%	RI	494,631	RI	852,812
	CT		3.42%	CT	78,535	CT	135,405
	NY		17.78%	NY	408,289	NY	703,946
	NJ		28.43%	NJ	652,848	NJ	1,125,601
	DE		0.04%	DE	919	DE	1,584
	MD		4.17%	MD	95,757	MD	165,099
	VA		5.41%	VA	124,232	VA	214,193
	NC		0.67%	NC	15,385	NC	26,527
Winter II (November 1 - December 31)	17.04%	Coastwide	1,383,648	2,385,600			
Total	100%	--	8,120,000	14,000,000			

Concepts Not Adopted Under Current Draft Options

Regional Quota Systems and Variations

A regional quota system alternative would determine two or more appropriate regions for quota allocation, between Maine and North Carolina. Quota management on a regional basis would be similar to the way the state-by-state quota is managed currently, with any overages subtracted from the regional quota in the following year. This idea was not pursued in the draft options above as

there has been little support indicated for this concept from Council and Board members or advisors.

An alternative form of regional allocation was proposed by a Council member, where regional allocations would be implemented in combination with a "scup model" approach, using a regional quota system during Winter I and Winter II and state-by-state quotas during the summer months. This idea is not included above due its potential complexity; however if the Committee supports this concept, a sub-option to Alternative 2D or a separate option could be created to reflect this idea.

Quarterly and Bimonthly Coastwide Quota Systems

Quarterly and bimonthly coastwide quota allocation options did not appear to have support from Council and Board members when previously discussed. These options may not have sufficient mechanisms to ensure equitable access to the resource by all states, gear types, and vessel size classes.

Phased-in Combination Historic Quota and Recent Distribution

Consideration was given to a phased-in approach to Alternative 2B (revised state-by-state allocations based on regional biomass distribution). This would establish a phased-in series of modifications to the current state-by-state allocation system, gradually incorporating recent distribution information from fishery independent surveys.

For example, upon the first year of implementation, state quotas would be established on the basis of 90% current state-by-state allocation and 10% recent stock distribution. A schedule would be established such that two years following implementation of these revised quotas, the ratio would move to 80% historical quotas/20% current distribution, then two years after that to 70%/30%, then to 60%/40% after another two years, until the allocations reach 50%/50% historical allocation/recent distribution.

This approach was not recommended by staff in the options above due to 1) the desire to maintain simplicity in the draft options, and 2) questions regarding the logistics and administrative requirements for phasing in such a quota change. If a phased-in approach is preferred, a sub-option could be developed with additional guidance from the Committee.

Questions to consider regarding a phased-in approach include:

- Are future changes at each stage of the phase-in pre-determined (based entirely on currently available information), or are changes re-evaluated at each stage (meaning the future allocations and impacts will not be known until future years)?
- If changes are re-evaluated at each stage based on newer information:
 - What administrative processes and analyses are needed to modify the allocations? What is the Council and Board role in approving a new allocation at each stage?
 - Would the new information only apply to the additional percentage attributed to recent distribution, or is the entire "recent distribution" proportion revised? e.g., when the percentages shift from 90/10 to 80/20, does the new analysis modify only the additional 10%, or the whole 20% attributable to recent data?

Biomass Ratio-Based Reallocation Triggers

Similar to draft alternative 2C above, biomass ratio (projected biomass relative to target biomass) based triggers were considered. For example, a biomass based trigger point for modified state-by-state allocations would be set at 85% of the target biomass, and the allocations would be modified when the summer flounder stock exceeded this ratio. Once the stock biomass exceeded 85% of the spawning stock biomass, the “additional” quota associated with this increase in biomass would be allocated differently than the current quota allocations.

This option was not recommended above due to the complexity of calculating the "additional quota" that would result directly from increases in B/B_{MSY} , and communicating this process to the public. The B/B_{MSY} ratio is only one element of the Council's risk policy impacting commercial quotas, and thus the calculation of what counts as "extra" quota tied to exceeding that ratio is complicated and may be difficult to evaluate each year and difficult to communicate to stakeholders. This option also requires up to date projections of stock biomass for a relevant year, potentially requiring more frequent assessment updates.

The “additional quota” in this option refers to the difference between what the commercial quota would be if the stock were at 85% of target SSB, and what the quota would be based on the relevant projection of stock biomass for the fishing year in question (assuming these projections are above 85% of SSB_{MSY}). For this comparison, two quotas would be calculated using the Council’s risk policy and ABC control rule, using the same assumed starting OFL, OFL CV, and projected commercial discards for that year. Additional quota does not refer to the total difference in the implemented commercial quota between year Y and year Y+1, but rather the portion of additional quota specifically resulting from the stock biomass estimate exceeding 85% of the biomass target and the resulting effects on the P^* in the Council's risk policy.

The Council’s ABC control rule currently uses a probabilistic approach to specify ABCs for stocks with accepted stock assessments. The control rule uses the Council’s risk policy to determine an acceptable probability of overfishing (P^*) as a function of the stock biomass and life history of the species (Figure 3). Lower stock size and/or life history characteristics that increase susceptibility to overfishing (and are not incorporated into assessments) require greater confidence that overfishing will be avoided (via larger buffers). The threshold acceptable probability of overfishing is 0.4 for species with a typical life history and 0.35 for those with an atypical life history.

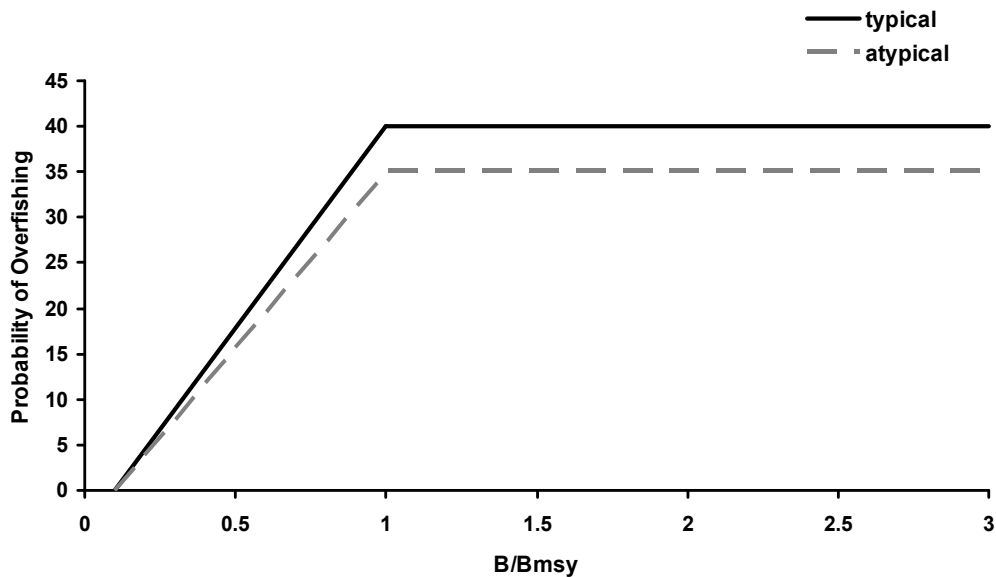


Figure 3: Council risk policy for determining the probability of overfishing (P*) from the ratio of B/Bmsy. Summer flounder is considered to have a "typical" life history.

The recommended catch limit for summer flounder in any given year, therefore, depends on 1) the recommended OFL, 2) the OFL probability distribution (OFL CV), and 3) the P* resulting from the application of the Council’s risk policy (which is dependent on the B/ B_{MSY} ratio). The P* value is directly determined by the B/B_{MSY} ratio⁶, and levels off after biomass reaches the biomass target (B/ B_{MSY} =1; Figure 3). Thus, assuming the same OFL and OFL CV, under the current control rule there would be no difference in the resulting commercial quota once stock size reaches or exceeds B/ B_{MSY} =1. Thus, there would be no “additional quota” available after the stock reaches or exceeds the biomass target. Overall quotas will be higher under higher stock biomass conditions assuming that higher projected stock biomass would result in higher OFLs, but they would not be impacted by the B/ B_{MSY} ratio once B/B_{MSY} >1. Thus, a B/B_{MSY} trigger point must be below 1 in order for this option to provide a meaningful difference in allocation above or below that point; for example, a threshold of B/ B_{MSY} =0.85 could be used. The difference in the resulting ABC at B_{MSY} =1 and B/ B_{MSY} =0.85 (all other conditions being equal) is 9.368%.

Another complication of this option is its reliance on stock assessment updates and stock biomass projections to increase the likelihood that the projected biomass for an upcoming fishing year reflects the actual population dynamics. This proposal uses the projected biomass in each year for the B/ B_{MSY} calculation within the risk policy. This means that over a 3-year projected time period, allocations could vary along with the multi-year catch limits, and the Council would not necessarily have a basis for revising these without a stock assessment update. The Council and Board would need to determine what the course of action would be if no new assessment update or biomass projection was available.

⁶ The B/B_{MSY} ratio used in this calculation is typically the projected stock biomass for the relevant upcoming fishing year.

APPENDIX I: Supplemental Data on "Scup Model" Seasonal Recommendation

Figure 4 and Table 7 describe the percentage of commercial summer flounder landings by gear tonnage class for September, October, and November, 2011-2015. Figure 5 describes the monthly percentage of summer flounder landings reported as caught in state waters vs. federal waters over 2012-2016. Table 8 describes the percentage of commercial summer flounder landings by month and gear type, 2012-2016.

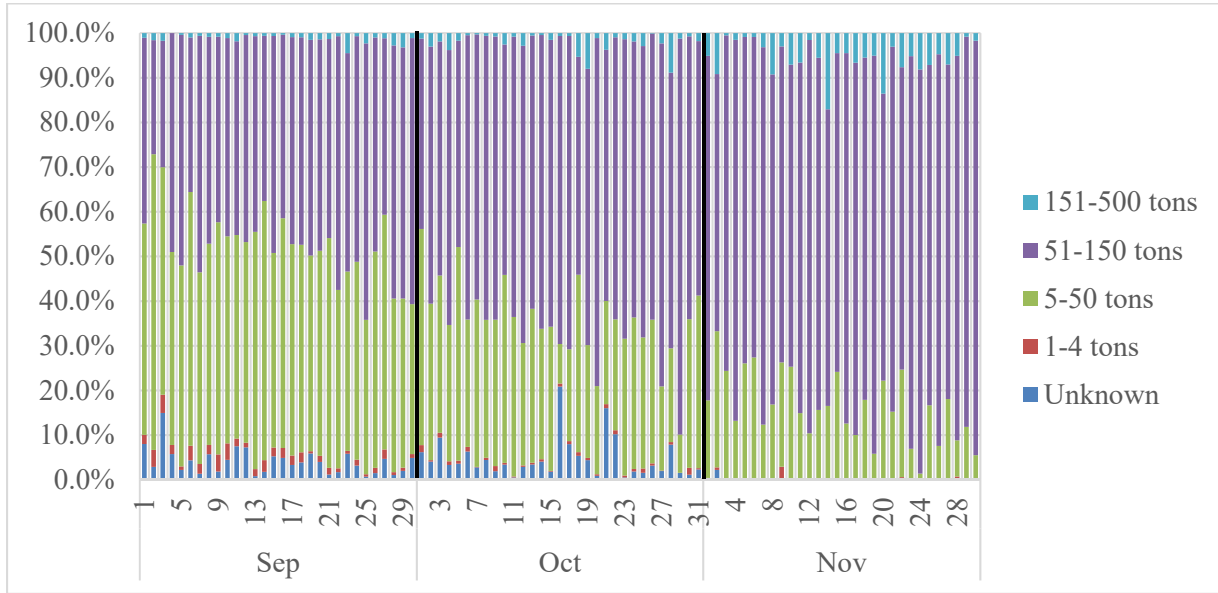


Figure 4: Percent of summer flounder landings by vessel tonnage class for September, October, and November, 2011-2015. Source: NMFS dealer data.

Table 7: Summer flounder commercial landings by vessel tonnage class for September, October, and November, from 2011-2015 dealer data.

		Sep	Oct	Nov
Vessel Tonnage	Unknown	4.00%	4.30%	0.10%
	1-4 tons	1.80%	0.60%	0.20%
	5-50 tons	46.30%	31.40%	15.10%
	51-150 tons	46.70%	61.80%	79.40%
	151-500 tons	1.20%	1.90%	5.20%

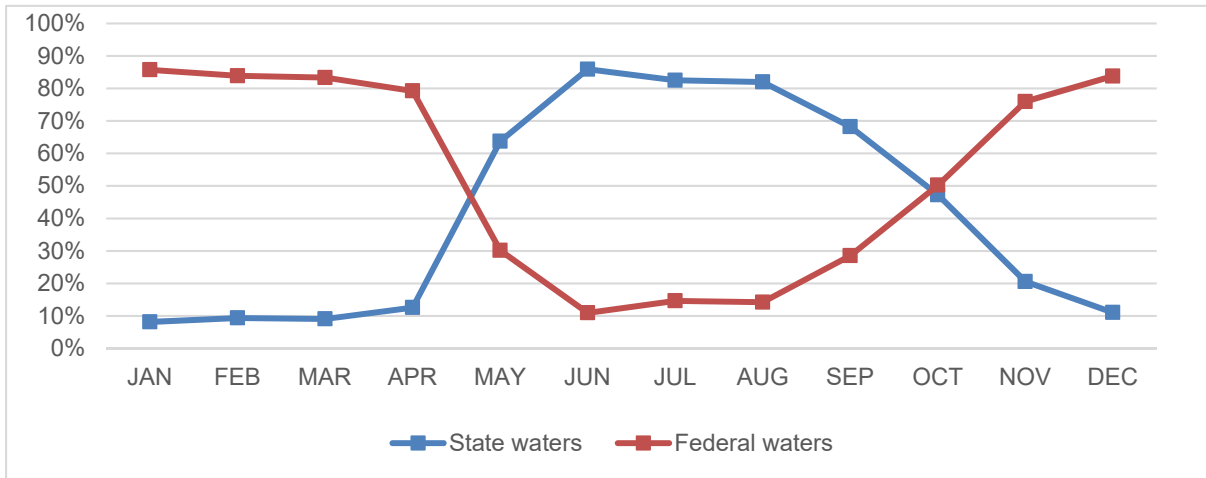


Figure 5: Summer flounder state vs. federal waters landings (coastwide) by month, as reported via 2012-2016 VTR data.

Table 8: Percentage of commercial summer flounder landings by gear category and month, 2012-2016 VTR data.

Gear Type	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
BOTTOM TRAWL	99.54%	99.74%	99.48%	98.56%	88.85%	88.80%	92.25%	93.67%	93.56%	92.58%	98.34%	99.09%	97.76%
GILLNET	0.15%	0.03%	0.03%	0.53%	5.94%	3.32%	1.36%	1.22%	2.59%	3.55%	0.62%	0.22%	0.74%
HANDLINE	0.01%	0.01%	0.00%	0.08%	3.02%	6.66%	5.42%	4.63%	1.22%	0.26%	0.03%	0.03%	0.72%
SCALLOP DREDGE	0.17%	0.12%	0.29%	0.53%	1.36%	0.40%	0.44%	0.03%	1.11%	2.52%	0.65%	0.21%	0.41%
BLANK/UNK.	0.14%	0.09%	0.19%	0.18%	0.34%	0.35%	0.29%	0.21%	1.22%	0.70%	0.33%	0.45%	0.27%
POT/TRAP	0.01%	0.01%	0.00%	0.06%	0.49%	0.44%	0.22%	0.21%	0.19%	0.21%	0.01%	0.00%	0.07%
OTHER	0.00%	0.01%	0.01%	0.05%	0.01%	0.04%	0.00%	0.02%	0.12%	0.18%	0.03%	0.00%	0.02%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%