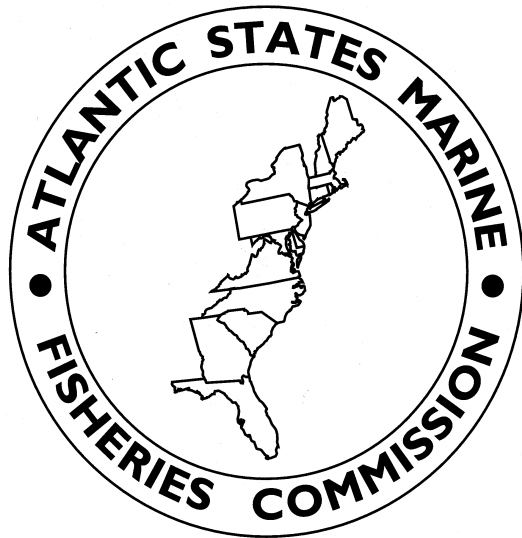


*Atlantic States Marine Fisheries Commission*

**ADDENDUM III TO THE SUMMER FLOUNDER, SCUP AND  
BLACK SEA BASS FISHERY MANAGEMENT PLAN**

**Recreational Fishery Specifications for 2001 for Summer Flounder and Scup**



March 22, 2001

## Background

This Addendum was adopted, on January 29, 2001, under the adaptive management/framework procedures that are a part of the Fishery Management Plans for Summer Flounder and Scup. The Addendum applies to both fishery management plans, and is authorized by Amendment 12, which amended each of these FMPs. These fisheries are managed cooperatively by the states, through the Atlantic States Marine Fisheries Commission, and the federal government, through the Mid-Atlantic Fishery Management Council and the National Marine Fisheries Service.

Amendment 2 to the Fishery Management Plan for Summer Flounder was adopted by the Commission and the Council in 1992. It established a comprehensive program for annual fishing regulations for summer flounder. Under the program as adopted, the States, operating through the Commission's Summer Flounder, Scup and Black Sea Bass Management Board, and the Mid-Atlantic Council meet jointly and make a recommendation to the Regional Administrator of NMFS with respect to a total allowable landings (TAL) for summer flounder and a regime of commercial and recreational fisheries regulations that are consistent with achieving the TAL. The Regional Administrator then proposes a rule that considers the recommendation, receives public comment, and publishes a final rule. Under the terms of the FMP, the fisheries in the states are bound by the decision of the Regional Administrator. States may be subject to a noncompliance determination by the Commission under the Atlantic Coastal Fisheries Cooperative Management Act, if they do not act in concert with the Federal regime and enact the required regulations.

In 1996, the Commission and the Council adopted the Fishery Management Plan and Addendum 1 for Scup. (In the federal version, this is Amendment 8 and the Regulatory Amendment to the Fishery Management Plan for Summer Flounder, Scup and Black Sea Bass.) It contained a regime similar to summer flounder for setting annual specifications for the commercial and recreational fisheries for scup. As in the case of summer flounder, fisheries in the states are bound by the decision of the Regional Administrator. The FMP specifically requires the states to implement recreational fisheries measures equivalent with the federal regulations.

In practice, the recreational fisheries for summer flounder and for scup are managed on a "target quota" basis. For each species, a set portion of the total allowable landings are established as a target, and measures are established by the states that can reasonably be expected to constrain the recreational fisheries to the target each year. It is impractical, because of the limitations of producing timely landings estimates, to try to manage these recreational fisheries on the basis of a real-time quota. Because the National Marine Fisheries Service had adopted an interim rule for 2001 that overrode the provisions of the federal FMP, the Council was limited to recommending a TAL of 17.91 million pounds, less than the FMP target of  $F_{\max}$ .

A monitoring committee for each of these species has been established with representatives from the Council, the Commission, the states and NMFS. These monitoring committees met on July 24, 2000 and made recommendations to the Council and Board with respect to specifications for 2001 for total levels of allowable harvest and landings, and for commercial fishing regulations. The Board met with the Mid-Atlantic Fishery Management Council on August 15, 2000, to consider to the recommendation of the monitoring committees. With respect to scup, the Board

and the Council recommended that total allowable landings for 2001 be limited to 4.4275 million pounds. With respect to summer flounder, the Board deferred making a recommendation.

On November 29, 2000, the Board met to continue its consideration of specifications for the summer flounder fishery for 2001, and decided that the 2001 total allowable landings for summer flounder should be 20.5 million pounds, which was larger than the Council-recommended TAL, of 17.91 million pounds, by 2.59 million pounds.

The Board met again with the Council on December 12, 2000, to consider recommendations from the monitoring committees for recreational fishing regulations for 2001 based on information from waves 1 through 4 of the Marine Recreational Fisheries Statistics Survey, the first eight months of the year. The Board decided at that time not to recommend any specifications for the recreational fisheries for summer flounder and scup, but rather to initiate this addendum process in order to set the specifications.

With respect to summer flounder the Board elected to consider allowing each state the opportunity to select regulatory specifications that would be designed to achieve a specified reduction in its recreational landings. At that meeting, the Council recommended to NMFS that the summer flounder recreational fishery specifications for 2001 include a 3-fish bag limit, a minimum size of 15.5 inches, and a season from May 25 through September 4 in the EEZ.

With respect to scup, the Council recommended that the recreational fishery specifications include a 50-fish possession limit, a minimum size of 11 inches, and a open season from August 15 to October 31 in the EEZ. The Council recommendations utilized recently-obtained preliminary information for wave 5, in addition to the information available to the monitoring committees. The Council recommendations were aimed to achieve a 53% reduction for summer flounder, and a 60% reduction for scup from the 2000 recreational harvest.

In 1998, the Commission and the Council adopted an amendment to all three of these fishery management plans, under the title Amendment 12 to the Fishery Management Plan for Summer Flounder, Scup and Black Sea Bass. In addition to measures for the Council to comply with the Sustainable Fisheries Act, Amendment 12 contained a framework procedure for modifying FMP elements without having to go through the complete FMP amendment process. The frameworking possibilities authorized by Amendment 12 include: minimum fish size, recreational possession limit, and recreational season.

The purpose of this Addendum, which is proposed by the states under Amendment 12, is to establish recreational fishing specifications for 2001 for summer flounder and for scup. Its provisions have no application beyond 2001.

### **Statement of the Problem**

The provisions of the fishery management plans for summer flounder and scup do not provide an opportunity to craft recreational measures that will adequately meet the reductions that the FMP requires. The FMPs each contemplate a single, coast-wide measure for recreational fisheries. But the application of bag, size and season limits end up having significantly different impacts

from one area within the range of these species to another, which result in a great deal of inequity, which is exacerbated when significant reductions are required. In previous years, states have been allowed to craft individual regulations to attempt to achieve the targeted reductions. However, the federal rule that contained the authority for these individual state approaches has expired. Thus, the states are faced with either adopting a single, coast-wide approach with all of its inequities in 2001; or taking action to allow individualized state approaches.

The most prominent data set that has been used in monitoring and assessing summer flounder and scup recreational fisheries is and has been the Marine Recreational Fisheries Statistics Survey. Throughout the year, data are collected in two-month "waves" using a method of trip intercepts (fisherman interviews), which are then expanded by a factor determined through a random telephone survey. For 2000, as in previous years, the monitoring committees considered preliminary information from the first four waves (January-August). For both summer flounder and scup, the preliminary 2000 MRFSS data predicted significant overages in the landings above the target landings for the recreational fishery.

At its joint meeting with the Council on December 12, 2000, in Atlantic City, New Jersey, the Board heard the reports of the monitoring committees, and significant industry input in the form of oral and written presentations that questioned the accuracy of the MRFSS estimates of landings.

### Summer Flounder

The Summer Flounder FMP allocates 40% of the annual total allowable catch to the recreational fishery. The states, operating through the Commission's Management Board, are required to develop and implement measures that can reasonably be expected to constrain the recreational fishery to this target. In 1993 the recreational fishery for summer flounder slightly exceeded its target landings (6%), but in 1994 and 1995 it was under its target (13% and 30%, respectively). From 1996 to 1999, the recreational fishery for summer flounder significantly exceeded its target catch (33%, 60%, 67% and 13%). In 1999, states were allowed to choose between a coastwide measure, or adopt state-specific approaches that would achieve the coastwide percentage reduction. The fact that the 1999 overage decreased greatly from the three previous years gave some reason to believe that the 2000 fishery might come in on target or close to it.

In 2000, states were again given some flexibility in deciding which recreational measures to adopt. However, rather than continue the 1999 trend to move towards staying within the target, the preliminary 2000 recreational landings increased dramatically. It was estimated that recreational landings of summer flounder in 2000 exceeded 15 million pounds, more than double the target. Thus, the MRFSS numbers for recreational summer flounder landings show steady increases from 1995 through 1998, a sharp decline in 1999, followed by a dramatically large increase in 2000. It is possible that the 1999 estimate is too low. The Board received testimony and information that argued that the MRFSS data for 2000 greatly overestimates the actual landings. Reports were made that both tackle sales and charter trips were down for 2000, and that the summer weather was not advantageous for fishing. The New York Fishing Tackle Trade Association looked at these items as well as bait sales in New York, and reported results that

were inconsistent with the MRFSS estimated increase in New York's recreational landings of summer flounder. Therefore, it is hard to justify that the 2000 landings were actually double those of 1999. On the other hand, the MRFSS-estimated 2000 recreational landings of summer flounder are consistent with the trend of recent years, if the 1999 landings estimated are not included in the trend. In any event, the 1999 and 2000 data points are troubling to reconcile.

The states are required by their fishery management plan to come up with recreational fisheries measures for 2001 that may reasonably be expected to constrain landings to 8.201 million pounds. However, the percent reduction required from the 2000 fishery varies depending on the approach used to estimate the landings for 2000. For example, it could require an overall reduction of 48% if the 2000 MRFSS estimates are used.

#### Board Action – Flounder

*I move to direct the staff to prepare an addendum for the Board to consider as soon as possible for the 2001 recreational specifications, as follows: That the states, using a recreational target of 8.2 M lbs., develop 2001 recreational fishery restrictions using a conservation equivalency approach to reduce 2000 landings (number) by the percentages detailed from a modified table 17 that includes an average of 1998-2000 landings data subject to revision using wave 5 and the 8.2 M lbs. harvest limit. This would also include a 3-year average of the state effectiveness (1999, 1999, 2000).*

*Board: Pierce/Colvin – carried, 9-1*

#### Scup

The Scup FMP allocates 22% of the total allowable catch to the recreational fishery. The Board and the states are required to develop and implement measures that can reasonably be expected to constrain the recreational fishery to this target. In 1997, the scup recreational fishery landed only 61% of the targeted amount; and in 1998 only 56%, despite the fact that the target for 1998 was reduced by 20%. In 1999 the target and the fishing measures were the same as for 1998, but the target was exceeded by more than 50%.

For 2000, the target catch and management measures were largely unchanged. However, the estimates of the monitoring committee indicated that the landings in 2000 will probably be more than three times greater than the allocation. It is likely that the increasing landings are a sign of significant stock recovery. Nonetheless, the overall scup stock, based on 2000 assessment data, is still below target levels, and is considered overfished. For 2001, the Board has set the recreational harvest limit for the recreational fishery at 1.771 million pounds. Although this is more than a 40% increase in the target, it would require a 66% reduction below 2000 landings levels to stay within the harvest limit. The Board is required by the FMP to arrive at management measures that can reasonably be expected to constrain landings in the recreational fishery for scup to 1.771 million pounds. Achieving this level in comparison to the 1999 and 2000 landings will likely cause major economic loss to the recreational fishery.

## **2001 Summer Flounder and Scup Management**

Through the approval of this Addendum the Board developed the standards that the states must meet in order to be in compliance with the Scup and Summer Flounder FMPs. The following sections detail the process that the states must follow prior to implementation of their recreational summer flounder and scup regulations for 2001.

### Summer Flounder

The 2001 recreational summer flounder management program is based on the states implementing combinations of minimum size limit, maximum possession limits, and seasonal closures to achieve state-specific percent reductions. States are required to reduce from an amount that equals the average landings in a state from 1998-2000, as reported by MRFSS. The state-specific reductions are summarized in Table 1. By taking the average landings from 1998-2000 the states must achieve a cumulative coastwide reduction of 33% to meet the recreational harvest limit in 2001.

The Management Board and Technical Committee developed the following methodology for the states to use to develop their 2001 management programs. The methodology was developed to allow a state to determine the percent reduction associated with various combinations of minimum size limits, maximum possession limits and seasonal closures.

Table 2 below includes the state-specific percent reduction associated with combinations of recreational size limits and possession limits. The states must use this table to determine their reduction associated with their proposed size/possession limit. Each state must also develop a state specific Wiebul curve based on the 1994-1998 MRFSS data to determine the effects of seasonal closures on the recreational summer flounder fishery. The Wiebul curve should be developed using only A+B1 summer flounder from MRFSS data, the B2 fish should not be included.

The state-specific Wiebul curves must be adjusted to account for the seasonal closures that were in place during 2000. This adjustment is achieved by “zeroing-out” any reductions gained from closed seasons in 2000. In other words if a state received a 15% credit for seasonal closures in 2000 from the Wiebul curve, any reductions associated with closures for 2001 will need to be reduced by 15%. As an example, state X was closed from January 1 - May 9 in 2000 which, based on the Wiebul curve, accounted for a 12% reduction. In 2001 state X is proposing to close from January 1 - June 2 which accounts for a 19% reduction based on the Weibul curve. In this example state X will only be able to receive a 7% (19%-12%) credit toward their required 2001 reduction given the proposed closure.

In developing their 2000 management programs the state also must address the fact that the cumulative reductions associated with size/possession limits and seasonal closures are not additive. In other words, the total recreational reduction does not equal the sum of the size/possession limit reduction and the seasonal closure reduction. In order to account for this fact the following equation must be used by the states to determine the total reduction associated with a combination of recreational measures. This approach is used in other Commission FMP's. The equation is:

Total Reduction =  $X + [(1-X)*Y]$ ;

X = The percent reduction associated with seasonal closure(s).

Y = The percent reductions associated with size/possession limit.

#### *Steps to Calculate State Summer Flounder Reductions for 2001*

1. Develop the size limit/possession limit combination for your state and determine the associated percent reduction from Table 2 below. This figure is the value of Y in the Total Reduction equation.
2. Develop state seasonal closure(s) for 2001 and determine the associated reduction using the Wiebul curve. Determine the reduction associated with the 2000 seasonal closure. Subtract the 2000 reduction from the 2001 reduction to determine the net 2001 reduction. This net reduction figure is the value of X in the Total Reduction equation.
3. Use the X and Y values from steps 1 and 2 above and use the Total Reduction equation to determine if the proposed regulations meet your states required reduction.

#### Scup

Through this Addendum the Management Board established a 2001 scup recreational management program based on reductions associated with the 1998-2000 MRFSS estimated scup landings. The states from Massachusetts through New Jersey (inclusive) are required to adopt recreational management measures for 2001 to achieve a 33% reduction in recreational landings. The states to the south of the range, Delaware, Maryland, Virginia, and North Carolina, are required to implement and enforce a 50-fish bag limit and a 8-inch minimum size limit for 2001.

The states from New Jersey through Massachusetts are required to use Table 3 below to determine the percent reduction associated with implementing a combination of bag limit and minimum size limit. Table 3 is based on the assumption that the states' regulations will be 85% effective. The Board also determined that these states must implement a minimum size of 9-inches or larger for 2001. In order to calculate the reductions associated with seasonal closures the states must use the Table 4. The Board determined that the available MRFSS data for New Jersey was very limited and that New Jersey must use the New York seasonal data (in Table 4) to calculate the reduction associated with seasonal closures.

#### **Approval of State Management Programs**

Each state must submit a proposal to achieve its required reduction to the Commission staff for Technical Committee evaluation by March 1, 2000. The Executive Director may approve any state plan that is approved by the Technical Committee. All other state plans will be submitted to the Board for review and approval by mail ballot or conference call.

Table 1. Summer Flounder landings (number) by state for 1998 (assuming a 34% reduction in the 1998 landings), and the average 1998-2000 landings (2000 landings projected based on waves 1-5). The percent reduction relative to average 1998-2000 landings necessary to achieve the 2001 recreational harvest limit is presented.

| State          | 1998 landings (Base year) | 34% reduction for 2001 | Average 1998-2000 landings | % reduction required |
|----------------|---------------------------|------------------------|----------------------------|----------------------|
| Massachusetts  | 383                       | 253                    | 306                        | 17                   |
| Rhode Island   | 395                       | 261                    | 525                        | 50                   |
| Connecticut    | 261                       | 172                    | 275                        | 37                   |
| New York       | 1230                      | 812                    | 1195                       | 32                   |
| New Jersey     | 2728                      | 1800                   | 2365                       | 24                   |
| Delaware       | 219                       | 145                    | 240                        | 40                   |
| Maryland       | 206                       | 136                    | 227                        | 40                   |
| Virginia       | 1165                      | 769                    | 693                        | 0                    |
| North Carolina | 391                       | 258                    | 326                        | 21                   |

Table 2. State-Specific Reductions Associated with combinations of Size/Possession Limits for Summer Flounder. Adjusted for fish less than 15.5 inches and/or landings greater than 8 fish.

Massachusetts

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.512                 | 0.512 | 0.512 | 0.537 | 0.537 | 0.537 |
| 2                | 0.244                 | 0.244 | 0.341 | 0.366 | 0.366 | 0.415 |
| 3                | 0.146                 | 0.146 | 0.244 | 0.268 | 0.268 | 0.415 |
| 4                | 0.098                 | 0.098 | 0.195 | 0.220 | 0.220 | 0.415 |
| 5                | 0.049                 | 0.049 | 0.146 | 0.171 | 0.171 | 0.415 |
| 6                | 0.000                 | 0.000 | 0.098 | 0.122 | 0.122 | 0.415 |
| 7                | 0.000                 | 0.000 | 0.098 | 0.122 | 0.122 | 0.415 |
| 8                | 0.000                 | 0.000 | 0.098 | 0.122 | 0.122 | 0.415 |

Rhode Island

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.668                 | 0.678 | 0.688 | 0.710 | 0.720 | 0.764 |
| 2                | 0.428                 | 0.467 | 0.482 | 0.512 | 0.538 | 0.612 |
| 3                | 0.285                 | 0.344 | 0.361 | 0.405 | 0.425 | 0.516 |
| 4                | 0.182                 | 0.246 | 0.268 | 0.319 | 0.339 | 0.447 |
| 5                | 0.118                 | 0.184 | 0.211 | 0.268 | 0.287 | 0.398 |
| 6                | 0.074                 | 0.145 | 0.172 | 0.231 | 0.251 | 0.361 |
| 7                | 0.037                 | 0.111 | 0.138 | 0.199 | 0.219 | 0.332 |
| 8                | 0.000                 | 0.081 | 0.108 | 0.170 | 0.189 | 0.302 |



### Connecticut

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.530                 | 0.559 | 0.574 | 0.607 | 0.626 | 0.733 |
| 2                | 0.278                 | 0.330 | 0.381 | 0.448 | 0.474 | 0.630 |
| 3                | 0.167                 | 0.233 | 0.304 | 0.385 | 0.411 | 0.578 |
| 4                | 0.104                 | 0.178 | 0.256 | 0.356 | 0.381 | 0.552 |
| 5                | 0.074                 | 0.152 | 0.230 | 0.330 | 0.359 | 0.530 |
| 6                | 0.044                 | 0.126 | 0.204 | 0.307 | 0.337 | 0.507 |
| 7                | 0.019                 | 0.100 | 0.181 | 0.285 | 0.315 | 0.485 |
| 8                | 0.000                 | 0.081 | 0.163 | 0.267 | 0.296 | 0.485 |

### New York

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.462                 | 0.503 | 0.538 | 0.576 | 0.596 | 0.669 |
| 2                | 0.213                 | 0.296 | 0.338 | 0.404 | 0.430 | 0.561 |
| 3                | 0.134                 | 0.220 | 0.271 | 0.347 | 0.376 | 0.513 |
| 4                | 0.076                 | 0.175 | 0.229 | 0.312 | 0.344 | 0.481 |
| 5                | 0.048                 | 0.150 | 0.204 | 0.287 | 0.318 | 0.459 |
| 6                | 0.025                 | 0.127 | 0.182 | 0.264 | 0.296 | 0.443 |
| 7                | 0.010                 | 0.111 | 0.169 | 0.252 | 0.283 | 0.433 |
| 8                | 0.000                 | 0.102 | 0.159 | 0.242 | 0.274 | 0.424 |

### New Jersey

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.514                 | 0.551 | 0.577 | 0.611 | 0.639 | 0.707 |
| 2                | 0.265                 | 0.332 | 0.373 | 0.433 | 0.483 | 0.596 |
| 3                | 0.139                 | 0.219 | 0.281 | 0.366 | 0.418 | 0.560 |
| 4                | 0.074                 | 0.164 | 0.238 | 0.327 | 0.384 | 0.541 |
| 5                | 0.045                 | 0.140 | 0.219 | 0.312 | 0.370 | 0.534 |
| 6                | 0.024                 | 0.127 | 0.205 | 0.298 | 0.358 | 0.527 |
| 7                | 0.009                 | 0.118 | 0.197 | 0.289 | 0.351 | 0.527 |
| 8                | 0.000                 | 0.111 | 0.190 | 0.283 | 0.344 | 0.527 |

### Delaware

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.429                 | 0.470 | 0.502 | 0.530 | 0.548 | 0.644 |
| 2                | 0.183                 | 0.242 | 0.288 | 0.338 | 0.365 | 0.493 |
| 3                | 0.073                 | 0.160 | 0.215 | 0.274 | 0.301 | 0.443 |
| 4                | 0.046                 | 0.132 | 0.187 | 0.247 | 0.274 | 0.429 |
| 5                | 0.018                 | 0.105 | 0.174 | 0.237 | 0.265 | 0.425 |
| 6                | 0.009                 | 0.100 | 0.169 | 0.233 | 0.260 | 0.420 |
| 7                | 0.005                 | 0.096 | 0.164 | 0.228 | 0.256 | 0.416 |
| 8                | 0.000                 | 0.091 | 0.160 | 0.224 | 0.251 | 0.411 |

Maryland

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.306                 | 0.367 | 0.418 | 0.444 | 0.485 | 0.551 |
| 2                | 0.061                 | 0.184 | 0.235 | 0.265 | 0.306 | 0.423 |
| 3                | 0.041                 | 0.163 | 0.214 | 0.245 | 0.286 | 0.408 |
| 4                | 0.026                 | 0.148 | 0.199 | 0.230 | 0.270 | 0.398 |
| 5                | 0.010                 | 0.133 | 0.184 | 0.219 | 0.265 | 0.393 |
| 6                | 0.000                 | 0.122 | 0.179 | 0.214 | 0.265 | 0.393 |
| 7                | 0.000                 | 0.122 | 0.179 | 0.214 | 0.265 | 0.393 |
| 8                | 0.000                 | 0.122 | 0.179 | 0.214 | 0.265 | 0.393 |

Virginia

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|
|                  | 15.5                  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.378                 | 0.421 | 0.463 | 0.490 | 0.529 | 0.583 |
| 2                | 0.100                 | 0.189 | 0.243 | 0.282 | 0.351 | 0.467 |
| 3                | 0.023                 | 0.131 | 0.185 | 0.243 | 0.320 | 0.448 |
| 4                | 0.000                 | 0.108 | 0.174 | 0.236 | 0.313 | 0.440 |
| 5                | 0.000                 | 0.108 | 0.174 | 0.236 | 0.313 | 0.440 |
| 6                | 0.000                 | 0.108 | 0.174 | 0.236 | 0.313 | 0.440 |
| 7                | 0.000                 | 0.108 | 0.174 | 0.236 | 0.313 | 0.440 |
| 8                | 0.000                 | 0.108 | 0.174 | 0.236 | 0.313 | 0.440 |

North Carolina – Adjusted for fish less than 15 inches and/or landings greater than 8 fish.

| Possession Limit | Minimum Size (inches) |       |       |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|-------|-------|
|                  | 15.0                  | 15.5  | 15.75 | 16.0  | 16.25 | 16.5  | 17.0  |
| 1                | 0.208                 | 0.396 | 0.443 | 0.509 | 0.590 | 0.637 | 0.755 |
| 2                | 0.019                 | 0.311 | 0.363 | 0.439 | 0.561 | 0.608 | 0.741 |
| 3                | 0.000                 | 0.292 | 0.354 | 0.439 | 0.561 | 0.608 | 0.741 |
| 4                | 0.000                 | 0.292 | 0.354 | 0.439 | 0.561 | 0.608 | 0.741 |
| 5                | 0.000                 | 0.292 | 0.354 | 0.439 | 0.561 | 0.608 | 0.741 |
| 6                | 0.000                 | 0.292 | 0.354 | 0.439 | 0.561 | 0.608 | 0.741 |
| 7                | 0.000                 | 0.292 | 0.354 | 0.439 | 0.561 | 0.608 | 0.741 |
| 8                | 0.000                 | 0.292 | 0.354 | 0.439 | 0.561 | 0.608 | 0.741 |

Table 3. Reductions Associated with combinations of Size/Possession Limits for Scup assuming 85% effectiveness of state regulations.

| Possession Limit | Minimum Size (inches) |       |       |       |       |
|------------------|-----------------------|-------|-------|-------|-------|
|                  | No Min. Size          | 7.00  | 8.00  | 9.00  | 10.00 |
| N/A              | 0.000                 | 0.053 | 0.083 | 0.172 | 0.357 |
| 1                | 0.715                 | 0.727 | 0.730 | 0.731 | 0.746 |
| 2                | 0.603                 | 0.626 | 0.632 | 0.693 | 0.673 |
| 3                | 0.526                 | 0.559 | 0.568 | 0.581 | 0.616 |
| 4                | 0.469                 | 0.512 | 0.522 | 0.540 | 0.577 |
| 5                | 0.422                 | 0.470 | 0.482 | 0.504 | 0.543 |
| 6                | 0.382                 | 0.432 | 0.445 | 0.474 | 0.514 |
| 7                | 0.347                 | 0.399 | 0.412 | 0.446 | 0.490 |
| 8                | 0.313                 | 0.366 | 0.379 | 0.417 | 0.469 |
| 9                | 0.282                 | 0.335 | 0.348 | 0.390 | 0.450 |
| 10               | 0.252                 | 0.305 | 0.318 | 0.365 | 0.432 |
| 15               | 0.147                 | 0.200 | 0.230 | 0.281 | 0.373 |
| 20               | 0.094                 | 0.147 | 0.177 | 0.228 | 0.357 |
| 25               | 0.053                 | 0.106 | 0.136 | 0.187 | 0.357 |
| 30               | 0.032                 | 0.085 | 0.115 | 0.172 | 0.357 |
| 35               | 0.021                 | 0.074 | 0.104 | 0.172 | 0.357 |
| 40               | 0.011                 | 0.064 | 0.094 | 0.172 | 0.357 |
| 45               | 0.000                 | 0.053 | 0.083 | 0.172 | 0.357 |

Table 4. Projected Reduction in Landings (in number) Associated With Closing One Day Per Wave. Based on 1995-1999 MRFSS Landings Data.

| State | MRFSS Wave |      |      |      |      |      |
|-------|------------|------|------|------|------|------|
|       | 1          | 2    | 3    | 4    | 5    | 6    |
| MA    | 0          | 0    | 0.48 | 0.52 | 0.63 | 0    |
| RI    | 0          | 0    | 0.02 | 0.81 | 0.79 | 0.01 |
| CT    | 0          | 0    | 0.18 | 0.58 | 0.83 | 0.03 |
| NY    | 0          | 0    | 0.23 | 0.71 | 0.65 | 0.04 |
| NJ    | 0          | 0    | 0    | 0.01 | 1.46 | 0.16 |
| DE    | 0          | 0    | 0    | 0.15 | 1.41 | 0.08 |
| MD    | 0          | 0    | 0    | 0.75 | 0    | 0.88 |
| VA    | 0          | 0    | 0    | 0.74 | 0.87 | 0.02 |
| NC    | 0          | 0.12 | 0.65 | 0.45 | 0.31 | 0.09 |
| Coast | 0          | 0    | 0.23 | 0.60 | 0.77 | 0.03 |