

**Emergency Rule to Temporarily Amend the Monkfish Fishery
Management Plan**

**Environmental Assessment
Regulatory Impact Review**

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Environmental Assessment

1.0 Introduction

Section 1.1 provides an Executive Summary of the monkfish emergency action being implemented by the Secretary of Commerce. The purpose and need for this action is discussed in Section 2.0. Section 3.0 contains a description of the proposed action and alternatives. Baseline information that describes the affected environment is provided in Section 4.0. Section 5.0 compares the environmental impacts of the emergency action and other alternatives.

Subsequent sections pertain to the requirements of other applicable law such as the National Environmental Policy Act (NEPA), the Endangered Species Act, the Marine Mammal Protection Act, Executive Order 12866 (Regulatory Impact Review), Coastal Zone Management Act, and Paperwork Reduction Act. Because public notice and comment is a requirement for emergency action under Section 305(c) of the Magnuson-Stevens Act, it is not necessary to conduct the analyses required by the Regulatory Flexibility Act (RFA). However, the Initial Regulatory Flexibility Analysis (IRFA) conducted for Framework 1 to the Monkfish FMP is applicable to this action, and is included in this submission as Appendix I because it provides important information about the impacts of the action on small business entities.

1.1 Executive Summary

The New England and Mid-Atlantic Fishery Management Councils jointly developed the Monkfish Fishery Management Plan (FMP) to conserve and manage monkfish. The FMP objectives include ending overfishing by 2002, and rebuilding the stock by 2009. The FMP included a provision that required the elimination of the directed fishery for monkfish on May 1, 2002 (the Year 4 default measures), unless a review during Year 3 indicated that other regulations could be implemented through a framework action that would meet the overfishing and rebuilding objectives of the FMP. The Year 4 default measures were included in the FMP to ensure that the FMP objectives were attained.

The Councils' Monkfish Monitoring Committee (MMC) conducted a review of the status of the fishery during Year 3 of the FMP. The MMC review process began in Fall 2001, and utilized the

most recent stock assessment results available at that time (Stock Assessment Workshop (SAW) 31, June 2000), landings data, and resource survey data to evaluate the status of the fishery. The MMC concluded that the condition of the stock was improving, and recommended that the Councils should develop a framework action to extend for one year the existing management measures. The MMC felt that the Year 4 default measures were unnecessarily restrictive given the improvements in the stock condition in both management areas.

The Councils considered the advice of the MMC, and proposed to modify the Year 4 management measures through Framework Adjustment 1 to the FMP. The management measures included in Framework 1 are described in detail in Section 3 of this document. In brief, the measures would have established a total allowable catch (TAC) for Year 4 at the same level as 2000 landings. Framework 1 also proposed to set trip limits that would maintain landings at the TAC level, while allocating 40 monkfish days-at-sea (DAS) to vessels issued limited access monkfish permits.

The Councils adopted Framework 1 for submission to NMFS in January 2002. At the January 2002 Council meetings, the Councils also received an updated monkfish stock assessment (SAW 34, January 2002) which supported the MMC conclusion that the condition of the stock was improving. SAW 34 recommended an update to the fishing mortality rate (F) criteria in the FMP, but the results of SAW 34 were not available in time for the Councils to incorporate the advice into Framework 1. As a result, NMFS was required to determine whether the measures proposed in Framework 1 were consistent with the F criteria in the FMP, and Framework 1 was found to be inconsistent. Therefore, the Year 4 default measures went into effect on May 1, 2002.

NMFS is taking emergency action to temporarily amend the Monkfish FMP in order to incorporate the F criteria recommended by SAW 34 into the FMP. This emergency action also implements the management measures proposed by the Councils in Framework 1 because, with the amendment of the F criteria in the FMP, these measures are consistent with the best available scientific information. The intent of these management measures is to maintain landings at the TAC levels specified below for the Northern Fishery Management Area (NFMA) and Southern Fishery Management Area (SFMA). A map depicting the respective monkfish management areas is

presented in Figure 1.

NFMA	SFMA	TOTAL (OY)
11,674 mt	7,921 mt	19,595 mt

The management measures established in this emergency rule to achieve this target TAC are as follows:

1. Allocation of 40 monkfish DAS for all limited access monkfish vessels with no trip limits in the NFMA while fishing on a monkfish or multispecies DAS;
2. Revised trip limits in the SFMA as follows:
 - a. 550 lb per DAS (tail weight) for vessel permit categories A and C (limited access permit categories for vessels that demonstrated a high level of historic monkfish landings), or
 - b. 450 lb per DAS (tail weight) for permit categories B and D (limited access permit categories for vessels that demonstrated a lower level of historic monkfish landings).
3. Maintenance of the incidental catch limits in effect during Years 2 and 3 of the FMP.

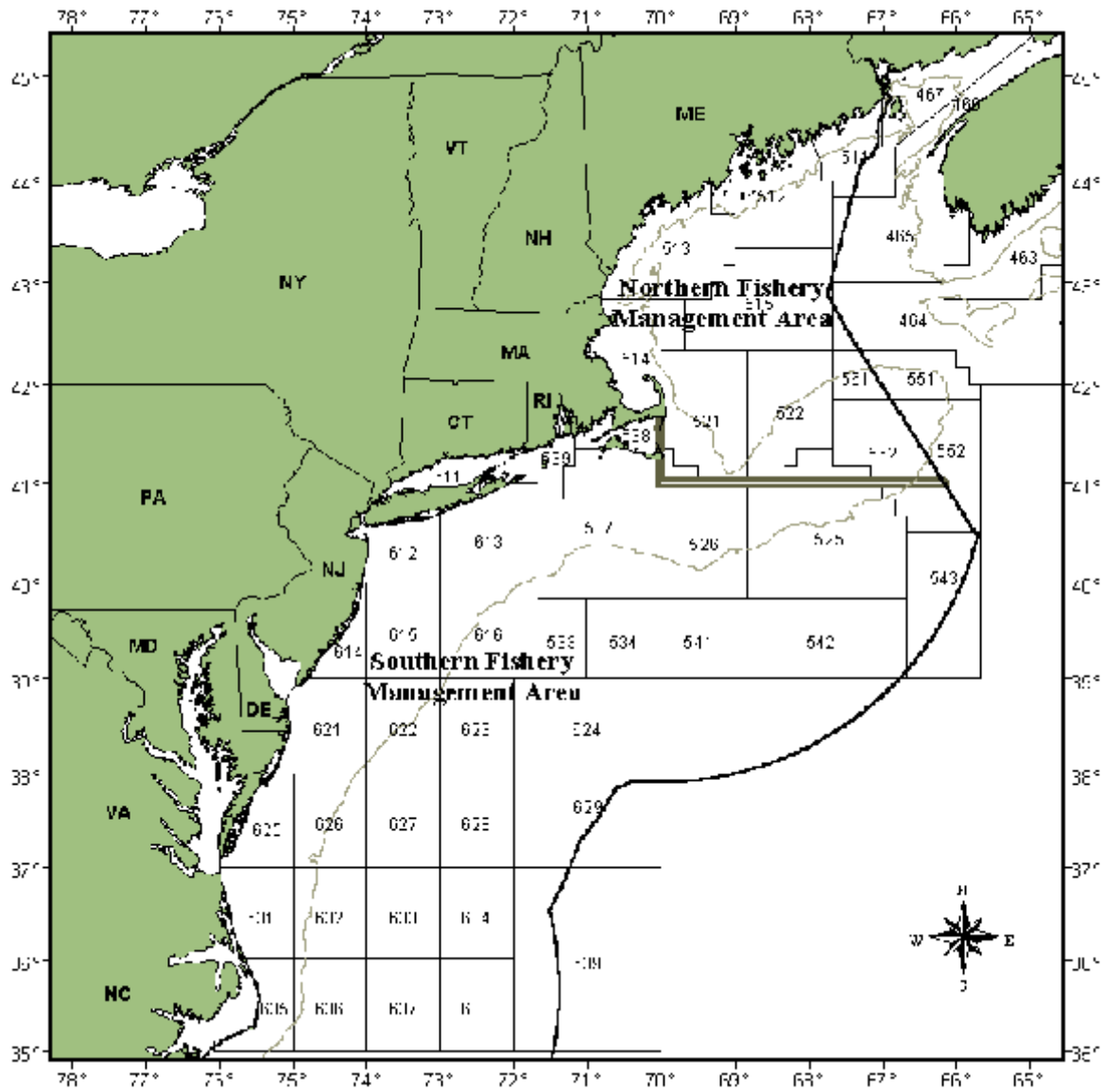


Figure 1. Monkfish management areas

1.2 Background Information

The Councils submitted the Monkfish FMP to NMFS on September 17, 1998. The FMP was approved by NMFS and the final rule that established the management measures was published in the *Federal Register* on October 7, 1999 (64 FR 54732), with the measures becoming effective on November 8, 1999. The FMP established a management program that includes:

- Management in two geographic areas: the NFMA and the SFMA;
- Limited access vessel permits in several permit categories (category depends on historic level of landings);
- Target TACs;
- Effort limitations (DAS);
- Trip limits;
- Incidental catch allowances;
- Minimum fish sizes;
- Gear requirements including minimum mesh size;
- Spawning season closures;
- Framework adjustment process;
- Vessel and dealer permit and reporting requirements.

The FMP objectives include ending overfishing by 2002, and rebuilding the stock by 2009. Year 1 of the plan began May 1, 1999. Starting in Year 2 of management, the FMP allocated 40 monkfish DAS for directed fishing for monkfish. In addition, trip limits went into effect in the SFMA that varied according to vessel permit category and gear type. For vessels fishing in the NFMA on a multispecies or monkfish DAS there were no trip limits in Year 2 or Year 3. However, a trip limit was established for scallop dredge vessels fishing under a scallop DAS in the NFMA.

The FMP specified that on May 1, 2002, the Year 4 default measures would be implemented. These default measures eliminate the directed fishery by allocating zero DAS, and specify more restrictive incidental catch limits for each category of permitted vessel. The FMP analyzed the impacts of the default measures, which were to be implemented unless a Year 3 review of the fishery indicated that other regulations could be implemented through framework action that would meet the FMP requirements. The Year 4 default measures are the no-action (status quo) alternative described in Section 3.2.

1.2.1 Federal Court Order

As noted above, in Year 2 of management the FMP specified trip limits for vessels fishing in the SFMA that varied by permit category and gear type. In 2001, a Rhode Island Federal Magistrate Judge issued recommendations to the Federal District Court Judge on motions for summary judgment in a suit brought by several southern New England and New Jersey gillnetters challenging the differential trip limits by gear type in the FMP for vessels fishing under a monkfish DAS in the SFMA. The Federal District Court Judge agreed with most of the conclusions and opinions of the Magistrate Judge and ruled that, based on the justification provided in the FMP, the differential trip limit violated National Standards 2, 4, and 5. The judge vacated the 300 pound-per-day gillnet trip limit and set a 1,500 pound trip limit, "for all monk fishermen...until such time as the Secretary [of Commerce] establishes a fair and equitable gear differential or otherwise revises the catch limit." The judge later clarified that the trip limits apply by permit category. A final order in the case of Hall et al. v. Evans et al. (C.A. No. 99-5491 (D.R.I.)) (hereinafter referred to as the 'Federal Court order' or the 'Federal Court decision') was issued on February 15, 2002. In developing measures for Framework 1, the Councils chose to maintain equivalent trip limits for all vessels within a permit category, and this emergency action maintains those same trip limits.

1.2.2 Three Year Review of the FMP

In 2001, the MMC conducted its three year review of the stock, as specified in the FMP. The MMC evaluated biological reference points and the effectiveness of management measures to stop overfishing and allow for rebuilding by 2009 based on the most recent scientific information available. This review relied on information from the 31st Stock Assessment Workshop (SAW 31, June 2001), landings and stock survey information.

The F criteria contained in the FMP are based on the stock assessment presented in SAW 23 (1997). Based on SAW 23, the FMP established fishing mortality thresholds ($F_{\text{threshold}}$) to determine whether or not overfishing was occurring in either management area. These $F_{\text{threshold}}$ levels were 0.05 for the NFMA and 0.14 for the SFMA.

Subsequent Stock Assessment Workshops (SAW 31; SAW 34, January 2002) concluded that several of the assumptions underlying the 1997 stock assessment were invalid. The application of

updated data and a more reasonable set of assumptions resulted in an unfeasible (negative) estimate of the $F_{\text{threshold}}$ in the NFMA. This also indicated that fishing mortality rates estimated using length composition data from the NMFS surveys did not result in reliable point estimates of the exploitation status of monkfish and should not be used to set target TACs. Therefore, in the Year 3 review, the MMC concluded that the target TACs specified in the FMP for Year 4 are inadequate measures of the fishery performance relative to the management objectives. The MMC used all available information to assess the stock condition and consider appropriate management measures.

The MMC examined a relative exploitation index based on fishing year (FY) landings and the fall survey index (Figure 2). The relative exploitation index declined dramatically from FY1999 to FY2000. Seasonal landings patterns suggest that even without further restrictions, F for calendar year 2001 was lower than that for calendar year 2000. The MMC concluded that the recent decline in the relative exploitation index provides additional evidence that the management program is having its intended effect.

Framework 1 was developed by the New England and Mid-Atlantic Fishery Management Councils (Councils), through the framework adjustment process specified in the FMP, in order to modify the management measures for the fishing year that began on May 1, 2002. In order to enact measures by May, they had to submit the framework action by February 1st. The SAW 34 results were presented to the Councils in late January, which precluded them from incorporating SAW 34's revised F criteria into Framework 1 as a formal change to the FMP. NMFS was unable to incorporate the SAW 34 revised F criteria into the framework action following submission by the Councils, because the framework process does not authorize the agency to make such a modification. Therefore, the F criteria in the FMP were not revised by Framework 1 to reflect the best available scientific information on the monkfish stock (SAW 34).

As discussed in Framework 1 and incorporated herein, SAW 34 that provided a range of estimates of F for calendar year 2000. Among these sets of estimates the SAW attached the most significance to those derived from the recent cooperative industry survey. The most probable estimates of F derived from this approach ranged from about 0.25 to about 0.4, that

is, from a level slightly above the suggested revised $F_{\text{threshold}}$ to a level twice that proposed.

These estimates include only 7 months of monkfish DAS restrictions and trip limits, which would result in an underestimate of the effect of the management measures in reducing fishing mortality. Furthermore, the results of the 2001 NMFS fall trawl survey indicate that in the NFMA the stock is no longer overfished, and that stock biomass in the SFMA is at its highest level since 1986. Finally, if landings are held constant, which is the intent of this action, and biomass continues to increase, F will necessarily decline.

The fact that stock biomass has increased significantly in both management areas at current landing levels indicates that the level of F resulting from the measures in this emergency action should allow the stock to continue rebuilding. Therefore, there is no evidence that these measures will prevent rebuilding by 2009. NMFS notes that this emergency action temporarily suspends the default measures. In the absence of any additional measures, these default measures will become effective upon the expiration date of this emergency rule or its extension.

The Councils intend to fully reconsider the best available scientific information in the development of revised overfishing definitions and a revised stock rebuilding program in Amendment 2, which is scheduled to be implemented by May 1, 2003.

1.2.3 Framework 1 as it relates to this Emergency Rulemaking

The Councils proposed in Framework 1 to delay the Year 4 default measures for one year to May 1, 2003, and to implement management measures on May 1, 2002, that would allow continued directed fishing. The Councils also proposed to establish measures consistent with a TAC based on 2000 landings; and set trip limits and DAS allocations to achieve the TACs. However as discussed above, the Council's did not formally change the FMP to incorporate the new scientific information necessary to justify the proposed measures. Framework 1 was submitted by the Councils to NMFS on February 7, 2002, and a proposed rule requesting public comment on this framework published in the *Federal Register* on April 4, 2002 (67 FR 16079).

The measures recommended by the Councils in Framework 1 are identical to those NMFS is implementing through emergency action. NMFS disapproved Framework 1 in so far as the measures were not found to be consistent with the F criteria contained in the FMP.

1.2.4 Amendment 2

The Councils have begun development of Amendment 2 to the FMP, to make permanent revisions to the FMP as appropriate. The current timetable for the amendment would result in implementation of any appropriate changes to the overfishing definitions, including the F criteria, and revisions to the management program by the start of Year 5 (May 1, 2003). The amendment will also provide a mechanism for updating Essential Fish Habitat (EFH) and other environmental impact components of the plan through a Supplemental Environmental Impact Statement (SEIS), as well as provide an opportunity to reduce the complexity of the current management program. Amendment 2 will also be able to address, in a more global way, bycatch reporting needs and minimization of bycatch.

2.0 Purpose and Need

NMFS is issuing this emergency rule to : (1) Announce the disapproval of Framework 1 in the context of the current F criteria in the FMP; (2) temporarily amends the F criteria in the FMP to be consistent with the best science available; and (3) temporarily implement the measures proposed in Framework 1 given that these measures comply with the revised F criteria and the objectives of the FMP. The purpose of this rule is to suspend temporarily the restrictive Year 4 default management measures that became effective May 1, 2002, and implement alternative measures for the monkfish fishery based on the best scientific information. This emergency action is effective for 180 days, and may be renewed for a second 180-day period.

The restrictive Year 4 default measures are expected to have a significant negative economic impact on monkfish vessels and monkfish-dependent communities, particularly on limited access monkfish vessels that hold either a Category A or B permit. Unlike monkfish vessels holding Category C or D permits, vessels that hold Category A or B permits do not possess a limited access multispecies or scallop permit. As a result, vessels that hold Category A or B permits tend to be more

dependent on the monkfish fishery, since they do not have the option of fishing under a multispecies or scallop DAS. There are currently 704 vessels that hold limited access monkfish permits, of which 54 hold Category A or B permits. According to the economic analysis conducted for Framework 1, incorporated into the Environmental Assessment (EA) for this emergency rule, 50 percent of vessels holding limited access Category A or B monkfish permits would lose approximately 60 percent of their net income from fishing, or greater. Conversely, the measures contained in this emergency rule would result in no income loss to Category A and B vessels.

There are currently 650 limited access monkfish vessels that hold Category C or D permits. As stated previously, these vessels hold a limited access multispecies or scallop permit in conjunction with their limited access monkfish permit. Vessels in these permit categories are authorized to fish under either a multispecies or scallop DAS and to retain an incidental catch of monkfish that is higher than the amount authorized for vessels not fishing under a DAS. According to the economic analysis prepared for Framework 1, under the default measures, 10 percent of Category C and D vessels would experience income losses of 25.8 percent and 43.3 percent or greater, respectively. However, under measures contained in this emergency rule, 10 percent of Category C and D vessels would experience losses to income of only 0.8 percent and 2.8 percent or greater, respectively. These estimates did not incorporate the potential impact of recent restrictions on the multispecies fishery resulting from a Federal Court order (Conservation Law Foundation et al. v. Evans; April 26, 2002). Therefore, the estimated losses to income resulting from the default measures and from the measures contained in this emergency rule are expected to be greater for Category C and D vessels than indicated in the available analysis.

Implementing this action through section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) is justifiable because the need to disapprove the framework action and immediately amend the FMP to make it compatible with the best scientific information available only became discoverable after NMFS had the time to fully evaluate the framework action after the public comment period had ended. As discussed above, this disapproval is based on the fact that the framework measures are not consistent with the FMP because the F criteria in the FMP have not yet been formally changed to reflect the best available

scientific information on the monkfish stock. The need to formally change the FMP to incorporate the updated F criteria was not clearly apparent earlier given the newness of the scientific information and the extremely compressed time frame for considering public comments and implementing the framework before the default measures became operative. Moreover, it would not have been possible to include a change to the FMP in Framework 1 to avoid the default measures because the scientific information necessary to justify the change was not available in time. Disapproval of the framework means that the default measures, which are no longer considered necessary in light of the best scientific information available, must remain in place until the newest science is incorporated into the FMP. To delay the incorporation of the newest science and implementation of the action necessary to avoid the default measures would result in substantial, unwarranted and unnecessary economic harm to the industry and would likely cause wasteful bycatch of monkfish in other fisheries. Because NMFS is constrained to only approve or disapprove a framework action, the only available way to implement this action, without further delay, is through the Magnuson-Stevens Act section 305(c) emergency authority.

3.0 Emergency Action and Alternatives Considered

NMFS evaluated two alternatives to the measures being established through emergency action: (1) measures that would maintain landings at the target TAC levels specified in Years 2 and 3 of the FMP; and (2) the impact of the Year 4 default measures (status quo/no action). None of the alternatives proposed to differentiate trip limits by gear type, so all are equally consistent with the Federal Court Order discussed in Section 1.2.1.

3.1 Emergency Action

The emergency action temporarily revises the F criteria in the overfishing definitions of the FMP to be consistent with the best available scientific information. This emergency action also suspends temporarily the Year 4 default measures specified in the FMP, specifies Optimum Yield (OY) and target TACs for each management area that are equivalent to the level of landings that occurred during Year 2 of the rebuilding

program, and establishes measures to achieve these target TACs and prevent overfishing.

NFMA	SFMA	TOTAL (OY)
11,674 mt	7,921 mt	19,595 mt

Table 1. Emergency Year 4 Optimum Yield and Management Area TACs

Landings will be maintained consistent with the target TACs by adjusting the trip limits for vessels to a level that will achieve the same level of catch as occurred during Year 2 of the FMP. A trip limit analysis was conducted in conjunction with Framework 1 to establish alternative trip limits and DAS allocations for the preferred and non-preferred TAC alternatives. The trip limit analysis is applicable to this emergency action because the trip limits proposed in Framework 1 are being implemented through this emergency rule. The trip limit options resulting from that analysis are outlined below. The full report is presented in Appendix II.

3.1.1 Temporary revision to F criteria in the FMP

This emergency action temporarily amends the existing F criteria in the FMP to be consistent with the recommendation of SAW 34, which is based on the best scientific information available. The following paragraphs provide justification for amending the existing F criteria in the FMP through this emergency action.

Existing FMP Criteria

The F thresholds defined in the FMP are $F=0.05$ for the NFMA and $F=0.14$ for the SFMA. The targets and thresholds in the FMP were generated using reference points and estimates of contemporaneous fishing mortality from SAW 23 (March 1997). Estimates of those reference points were recalculated during SAW 31 (October 2000) using updated data and under different hypotheses, which were considered to be more reasonable, regarding the mean length of full selection to the fishing gear (survey or commercial). This resulted in negative estimates of the F threshold for the NFMA, which is an unrealistic result, indicating that the F reference points in the FMP are not reliable as indicators of stock status with

respect to exploitation rates. As a result, the 31st Stock Assessment Review Committee (SARC) concluded that the fishing mortality reference points established in the FMP needed to be reevaluated.

The 34th SARC recognized inherent flaws in the method used to establish the F criteria in the FMP and discussed potential alternatives for establishing revised F criteria. The SARC stated that information now exists to estimate current F rates by age, and that yield per recruit (YPR) analyses could be used to establish revised reference points. Based on a provisional YPR analysis, the SARC recommended F thresholds of $F=0.2$ and F targets of $F=0.14$ for the stock units in both the NFMA and the SFMA.

Fishing Mortality Reference Points

Overfishing for monkfish is defined to occur when the F exceeds the $F_{\text{threshold}}$ of F_{MSY} . A widely-used proxy for F_{MSY} is the F that results in maximum yield per recruit (F_{MAX}). The current estimate of F_{MAX} is 0.20. This value applies to both fishery management areas because the rates of body growth and natural mortality (M) are similar in each management area.

Fishing mortality rate targets can be computed in a variety of ways, and are intended to assure a minimum probability that F_{MSY} is exceeded in any year. A common F_{target} proxy is $F_{0.1}$ (the fishing mortality rate where the increase in yield per recruit for an increase in a unit of effort is 10% of the yield per recruit produced by the first unit of effort on an unexploited stock). In practice, use of $F_{0.1}$ provides most of the benefits in yield and spawning biomass per recruit as would be gained by fishing at F_{MAX} , but with moderately lower fishing effort. Accordingly, the F_{target} for monkfish is proposed as $F_{0.1} = 0.14$ in both management areas. This represents a fishing mortality rate which is expected to produce optimal yield for a recovered stock.

Justification

F_{MAX} is frequently used as a proxy for F_{MSY} when estimates of F_{MSY} (incorporating recruitment variability, growth, natural mortality and ages selected by the fishery) are not available. Alternative proxies for F_{MSY} are based on $F_{\% \text{MSP}}$, the F that produces a given percent of the maximum spawning potential

(maximum spawning potential is assumed to be achieved when $F=0$). Values in the range of $F_{30\%}$ to $F_{40\%}$ have typically been used as proxies for F_{MSY} and $F_{35\%MSP}$ is recommended for stocks with 'average' resilience (Gabriel and Mace 1998). For monkfish, the F_{MAX} value of 0.20 is equivalent to $F_{32\%MSP}$. An additional alternative is to approximate F_{MSY} using the natural mortality rate (M). The M for monkfish is assumed to be 0.2 (i.e., in this case, equivalent to the calculated value of F_{MAX}).

$F_{0.1}$ is adopted as the F_{target} because it represents a more conservative fishing mortality rate than F_{MSY} or its proxy, but has little effect on the expected equilibrium yield (Gabriel and Mace 1998). For monkfish, the $F_{0.1}$ value of 0.14 is equivalent to $F_{43\%MSP}$.

The fishing mortality reference points currently defined in the monkfish FMP were estimated using information available at SAW 23 (NEFSC 1997). The estimation method was based on length frequency data and depends on equilibrium assumptions such as constant recruitment and mortality. The length-based method was used for monkfish because no age data were available. Subsequent refinements to the length-based F estimates (SAW 31, NEFSC 2000) resulted in infeasible (negative) values for the F reference points in the northern management region using the length frequency method (assuming $M=0.2$). Age data from the NMFS surveys and results from the industry-based cooperative monkfish survey were available for the SAW 34 assessment (NEFSC 2002). The assessment included age-based yield per recruit analyses. The analysis was conducted for management regions combined because data from the cooperative survey indicated no difference in monkfish growth rates in the two management regions (e.g., the same values apply to each management area because growth and Natural mortality rates are similar in each). The 34th SARC recommended replacing the current F reference points for monkfish with reference points based on the yield per recruit analyses. Subsequent research has indicated that the estimate of F_{MAX} is robust to effects of differential Natural mortality rates by sex, differences among management regions, and the effects of discards.

Alternative Approaches

Surplus production modeling was considered by SAW 34 as an alternative method for establishing biomass and F reference points for monkfish. Significant problems exist in its application to monkfish primarily because of uncertainties about catch levels (e.g., likely under reporting of catches) prior to the mid-1980s. The SARC concluded that the data currently available are insufficient to support this modeling approach.

3.1.2 NFMA Trip Limits

Vessels fishing in the NFMA will continue to fish under the same measures as those established in Years 2 and 3 of the management program. Vessels will be allocated 40 monkfish DAS with no trip limit specified for vessels fishing under a monkfish or multispecies DAS. Scallop dredge vessels fishing under a scallop DAS (but not a monkfish DAS) will continue to be subject to a trip limit of 300 lb per DAS (tail weight). This action maintains the requirement from Years 2 and 3 for vessels to declare their intent to fish in the NFMA in order to be eligible to fish in the area with no trip limit. A vessel owner must declare the intention to fish only in the NFMA for a minimum of 30 days; and while fishing under such a declaration may not fish for or possess monkfish in the SFMA, nor be in the SFMA while called in on a monkfish DAS, except under the transit provisions (which require gear to be stowed).

In the development of Framework 1, the Councils considered two options for the NFMA to achieve the same landings as in FY2000. These options are discussed in Appendix II as Options 1a and 1b. Since vessels fishing in the NFMA under a multispecies DAS do not have a monkfish trip limit, a trip limit that would duplicate FY2000 landings would be equivalent to the trip limit in effect in FY2000, that is, no trip limit. The analysis was designed to estimate a trip limit for directed trips (where monkfish is more than 50 percent of the total landings) while constraining non-directed trips to either 50 percent (Scenario 1a) or 25 percent (Scenario 1b) of the total catch.

Since no reduction in total catch is the objective, no trip limit is necessary to constrain catches in the analysis. Therefore, there is no basis for limiting catches of non-directed trips under either Scenario 1a (limiting non-directed trips to 50 percent of total catch) or Scenario 1b (limiting

non-directed trips to 25 percent of total catch).

3.1.3 SFMA Trip Limits

Vessels fishing in the SFMA will continue to be allocated 40 monkfish DAS, and trip limits will be established by permit Category. Vessels in Categories A and C will have a trip limit of 550 lb per DAS (tail weight), while vessels in Categories B and D will have a trip limit of 450 lb per DAS (tail weight).

In Framework 1, the Councils considered three combinations of DAS and trip limits to achieve the same landings as Year 2 for the SFMA. These alternatives allow the trade-offs between trip limit level and DAS allocations to be considered. The alternative enacted in this emergency action is consistent with the action recommended by the Council for Framework 1.

In the development of Framework 1, the Councils considered three options to achieve the preferred alternative TAC for the SFMA, identified as Scenarios 3a, 3c and 3d in Appendix II. The Councils recommend Scenario 3a in response to industry comments on Framework 1 that indicated a higher number of DAS with restrictive trip limits is preferred over a lower number of DAS (fishing opportunities) with higher trip limits. As noted above, the trip limits recommended by the Council are consistent with the trip limits being implemented through this emergency rule.

The analysis of these options was based on the fishing patterns in FY2000. At the Monkfish Committee's request, an analysis was also conducted using the FY1999 fishing patterns, to use catch data from an unconstrained fishery (there were no trip limits and DAS in 1999) to predict catches under the proposed limits, particularly where the limits are higher than were in place in FY2000. (The Federal Court decision required that trip limits for non-trawl and trawl vessels be consistent, resulting in increased trip limits for non-trawl vessels under some of the analyzed scenarios.)

Scenarios 3b, 3d and 3e in Appendix II are based on 1999 catch data. However, since the proportion of 1999 landings by vessels that either did not get a limited access permit in 2000 or used a dredge was so high, the amount of monkfish available in the analysis to the limited access vessels was smaller than when FY2000 data were used, even though total

FY1999 landings were nearly double those in FY2000. Therefore, after removing dredge and landings for vessels that did not get a limited access permit, the pool of landings available in the analysis to limited entry vessels was relatively low (compared to FY2000 landings) so when those available landings are distributed to the individual permit holders, the trip limit is proportionally lower. The SFMA management alternatives considered by the Councils to achieve the recommended TAC are as follows:

Scenario 3a. Vessels fishing in the SFMA would be allocated 40 monkfish DAS. Vessels in Categories A and C would have a trip limit of 544 lb (tail weight, per DAS), while vessels in Categories B and D will have a trip limit of 457 lb (tail weight, per DAS).

Scenario 3c. For vessels fishing in the SFMA, vessels in Categories A and C would retain the current trip limit of 1,500 lb (tail weight, per DAS) with an allocation of 14 monkfish DAS, while vessels in Categories B and D would retain the current trip limit of 1,000 lb (tail weight, per DAS) with an allocation of 19 DAS.

Scenario 3e. For vessels fishing in the SFMA, vessels in Categories A and C would have a trip limit of 1,000 lb (tail weight, per DAS) with an allocation of 17 monkfish DAS, while vessels in Categories B and D would have a trip limit of 700 lb (tail weight, per DAS) with an allocation of 23 DAS.

3.2 Year 4 Default Measures (No Action/Status Quo)

This alternative reflects the Year 4 default management program that was implemented on May 1, 2002, as specified in the FMP. This alternative would eliminate the directed monkfish fishery. The target TACs in the following table were calculated in the original FMP in 1997. The impacts of these default measures were analyzed in the FMP and, for comparative purposes, are incorporated by reference herein.

NFMA	SFMA	TOTAL (OY)
4,047 mt	3,252 mt	7,299 mt

Table 2. No-action alternative for specification of OY and Management Area TACs for Year 4

Under the Year 4 default measures, no monkfish DAS are allocated to limited access vessels, and vessels must fish under more restrictive incidental catch limits than those in effect during Years 2 and 3 of the FMP. Tables 3 and 4 show the monkfish trip limits by permit Category for vessels fishing on a DAS or not on a DAS, respectively, with the Year 4 trip limits highlighted. Figure 2 is a flowchart showing the process by which a vessel can determine which of the five trip limits apply to that vessel in Year 4.

Effective Date	Permit Category	DAS Program	Area	Gear*	Trip Limit per DAS**
Prior to May 1, 2002	A & B, and C & D with LA*** scallop	Monkfish	NFMA	All Gear	No trip limit
Prior to May 1, 2000	A, B, C, D	Monkfish	SFMA	All Gear	No trip limit
May 1, 2000	A or C	Monkfish	SFMA	Trawl	1,500 lb of tail-weight
May 1, 2000	B or D	Monkfish	SFMA	Trawl	1,000 lb of tail-weight
May 1, 2000	A, B, C, D	Monkfish	SFMA	Non-Trawl	300 lb tail-weight
Prior to May 1, 2002	C and D	<u>Multispecies</u>	NFMA	All Gear	No trip limit
May 1, 2002	C and D	<u>Multispecies</u>	NFMA	All Gear	300 lb tail-weight, or 25% of total weight of fish on board, whichever is less
Prior to May 1, 2002	C and D	<u>Multispecies</u>	SFMA	Trawl	300 lb tail-weight
May 1, 2002	C and D	<u>Multispecies</u>	SFMA	Trawl	300 lb tail-weight, or 25% of total weight of fish on board, whichever is less
Prior to May 1, 2002	C and D	<u>Multispecies</u>	SFMA	Non-Trawl	50 lb tail-weight
May 1, 2002	C and D	<u>Multispecies</u>	SFMA	Non-Trawl	50 lb tail-weight, or 25% of total weight of fish on board, whichever is less
Prior to May 1, 2002	C and D	Scallop	SFMA and NFMA	Dredge or net exemption	300 lb tail-weight
May 1, 2002	C and D	Scallop	SFMA and NFMA	Dredge or net exemption	200 lb tail-weight

*Dredge gear is prohibited when fishing under a monkfish or Multispecies DAS

**Or the whole-weight equivalent (tail weight x 3.32)

***LA = Limited access

Table 3. Monkfish trip limits for limited access vessels when fishing under a DAS. Year 4 default measures are shaded. Open Access (Category E) vessels fishing under a Multispecies or Scallop DAS have the same trip limits as the corresponding Limited Access vessels in Year 4.

Effective Date	Permit Category	Gear*	Trip Limit*
November 8, 1999	A, B, C, D, or E	Large Mesh (minimum regulated multispecies mesh size)	Up to 5% (whole or tail) of total weight of fish on board/trip
November 8, 1999	A, B, C, or E	Small Mesh (Less than regulated multispecies mesh size)	50 lb/trip
November 8, 1999	C, D or E vessels with Multispecies LA permits that are <30 feet	All Gear	50 lb/trip

* These trip limits do not apply to dredge gear since vessels are prohibited from possessing or landing monkfish unless under a Scallop DAS while in possession of dredge gear.

Table 4. Monkfish trip limits for vessels (all permit categories) not fishing under a Scallop or Multispecies DAS.

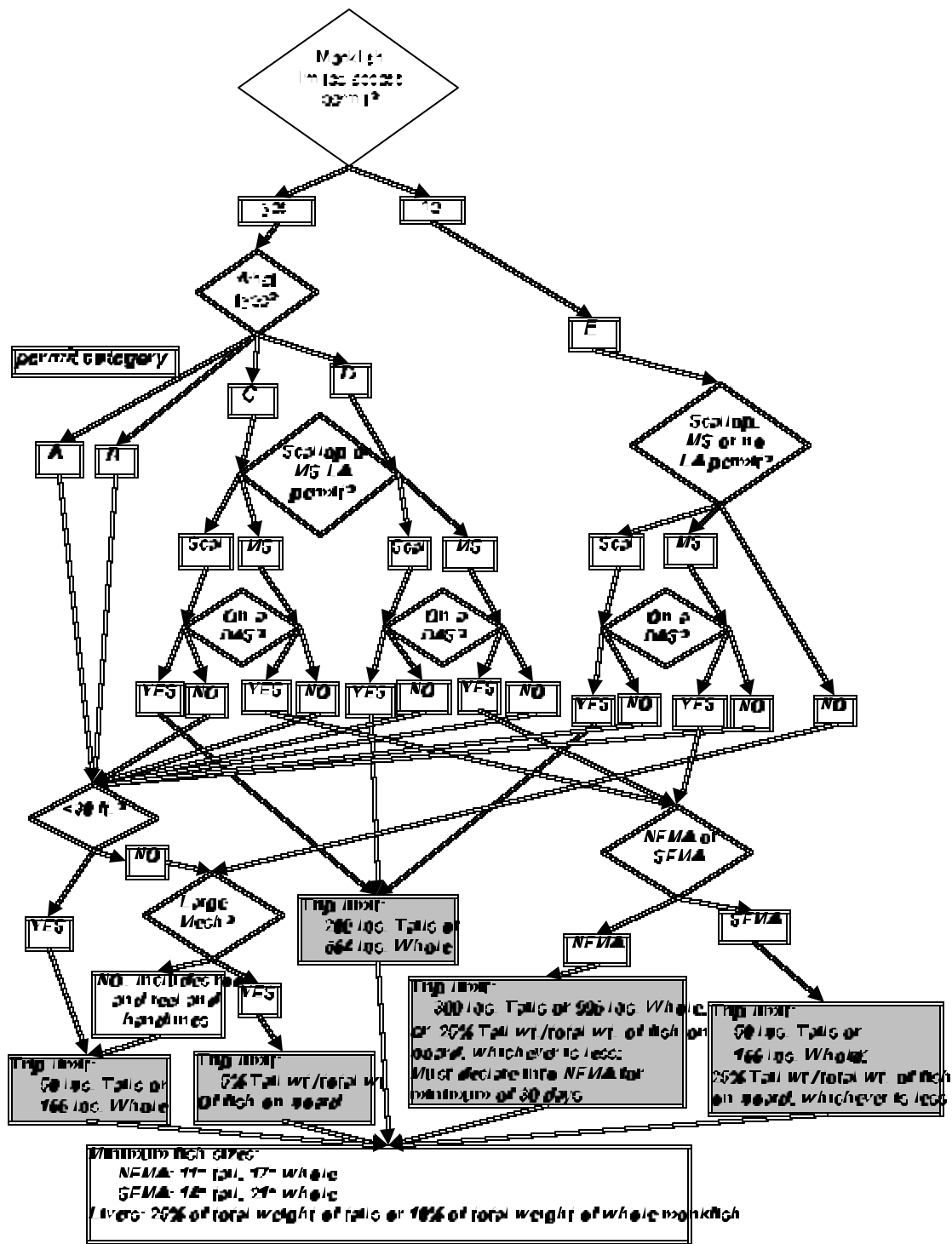


Figure 2. Flowchart showing Year 4 monkfish trip limits, the no-action alternative

3.3 Alternative to Maintain TAC Unchanged from Years 2 and 3

In Framework 1, the Councils considered maintaining the same OY and TACs specified in the FMP for Years 2 and 3 for one additional year. These TACs were estimated in 1997 in the FMP, and were consistent with the F criteria and rebuilding strategy adopted by the Councils at that time. However, this F criteria has since proven to be invalid and is not amended by this action. Therefore, NMFS is not adopting this alternative based on the scientific invalidity of the F reference points used to calculate the TACs. The trip limit options to achieve the target TAC in each management area are described in the following sections.

NFMA	SFMA	TOTAL (OY)
5,673 mt	6,024 mt	11,697 mt

Table 5. OY and Management Area TACs if TACs for Years 2 and 3 are maintained for Year 4

3.3.1 NFMA Trip Limits

Two options to achieve the Year 2 and 3 target TACs for the NFMA were considered by the Council in the development of Framework 1. These options are identified as Scenarios 2a and 2b in Appendix II.

Scenario 2a. Vessels fishing in the NFMA would retain monkfish (tail weight) up to 50 percent of the total weight of fish on board, or for permit Category A and C, 282 lb (tail weight, per DAS) and for permit Category B and D, 272 lb (tail weight, per DAS), whichever is greater.

Scenario 2b. Vessels fishing in the NFMA would retain monkfish (tail weight) up to 25 percent of the total weight of fish on board, or for permit Category A and C, 446 lb (tail weight, per DAS) and for permit Category B and D, 387 lb (tail weight, per DAS), whichever is greater.

3.3.2 SFMA trip limit

Three options to achieve the Year 2 and 3 TACs for the SFMA were considered by the Councils in Framework 1, identified as

Scenarios 4a, 4c and 4e in Appendix II. The analysis of these options was based on the fishing patterns in FY2000.

Scenario 4a. Vessels fishing in the SFMA would be allocated 40 monkfish DAS. Vessels in Categories A and C would have a trip limit of 309 lb (tail weight, per DAS), while vessels in Categories B and D would have a trip limit of 267 lb (tail weight, per DAS).

Scenario 4c. For vessels fishing in the SFMA, vessels in Categories A and C would retain the current trip limit of 1,500 lb (tail weight, per DAS) with an allocation of 10 monkfish DAS, while vessels in Categories B and D would retain the current trip limit of 1,000 lb (tail weight, per DAS) with an allocation of 13 DAS.

Scenario 4e. For vessels fishing in the SFMA, vessels in Categories A and C would have a trip limit of 900 lb (tail weight, per DAS) with an allocation of 14 monkfish DAS, while vessels in Categories B and D would have a trip limit of 600 lb (tail weight, per DAS) with an allocation of 19 DAS.

4.0 Affected Environment

4.1 Biological

The monkfish resource in US waters is distributed from the Gulf of Maine through Cape Hatteras. Data to definitively distinguish separate stock units of monkfish are currently unavailable. Differing recruitment patterns combined with low mixing suggest the existence of two stock units. However, similar growth and maturity patterns along with genetic testing argue for a single stock unit. The stock assessment and management program consider the stock in two separate assessment units (northern and southern, separated along the middle axis of Georges Bank).

Reported landings (converted to live weight) have steadily increased from an annual average of 2,500 mt in the 1970s to 8,700 mt in the 1980s and 23,000 mt in the 1990s. Biomass in the northern area has been below the FMP biomass threshold level since 1989 but was estimated by SAW 34 to be close to the threshold level in 2000. Biomass in the southern area has been below the FMP biomass threshold level since 1987. Size distributions in fishery-independent surveys have become

truncated over time. Indices of egg production have declined by around 80% since the 1970s and the proportion of spawners below the age of full maturity has increased; however, recruitment in the northern area has recently increased.

Total reported landings (live weight) increased from several hundred mt in the early 1970s to 28,500 mt in 1997 and have since remained high. Landings in 2000 declined substantially in the south but increased moderately in the north. These landings patterns are likely due to the fishery management measures established in 2000. Landings in the early part of the time series are thought to be under-reported. The accuracy of landings data has improved with mandatory reporting beginning in 1994.

During 1998-2000, trawls caught 54% of USA landings, scallop dredges 17%, and gill nets 29%. Estimates of discard rates are 7-15% of the catch in the north and 6-22% in the south.

The data used in the SAW 34 stock assessment included NEFSC research survey catch per tow indices (mean numbers and weights), an industry cooperative survey, research survey length distributions, and commercial fishery data from vessel trip reports, dealer records and on-board fishery observers. Mortality estimates were calculated from catch-per-tow-at-length and catch-per-tow-at-age indices from bottom trawl surveys as well as catch-biomass ratios, yield per recruit analyses, surplus production modeling and a swept-area estimate of current biomass. Most reliance was put on age-based methods and the catch-biomass ratios from the cooperative survey.

There is evidence of increased recruitment in the northern area during the 1990s (10-20 cm animals). In the southern area recruitment appears to have fluctuated without trend.

A cooperative industry survey conducted from February-April 2001 over the range of distribution collected substantial new data appropriate to the assessment of this stock. SAW 34 reported some of the important findings from the cooperative survey to be:

- the size distribution of fish captured in the southern area was very similar to that observed in the NEFSC Winter survey for 2001;
- growth rates were similar in northern and southern areas;

- catchability of NEFSC winter survey gear was approximately half that of the gear used to conduct the cooperative industry survey;
- 9 incidences of cannibalism were detected among 2160 stomachs examined (0.42%);
- monkfish larger than about 70 cm were all females. The maximum age for males caught was age 8 and for females age 10.

4.2 Description of the Fishery

4.2.1 Landings

Since implementation of the FMP on November 8, 1999, all monkfish permit holders have been required to report landings on their vessel trip reports (VTR). All permitted dealers have been required to submit dealer reports. Table 6 shows preliminary VTR monthly and annual landings by management area and gear type for Year 2 of the management plan (May 2000 - April 2001, the first full year of management under the FMP). Table 6 also shows monthly and annual landings for the May-April periods starting in May 1998. Since VTR data only captures about 70 percent of the landings in the dealer reports, these data have been prorated to equate to the same level of landings as reported by the dealers.

Preliminary Year 2 VTR landings were 19,595 mt (43.2 million lb), made up of 11,674 mt (25.7 million lb) in the NFMA and 7,921 mt (17.5 million lb) in the SFMA, compared to target TACs of 5,673 mt and 6,024 mt, respectively. In the NFMA, landings were double the target TAC, while in the SFMA, landings were about 31 percent over the TAC. Compared to the previous year, NFMA landings increased by approximately 1,800 mt, or 20 percent, while in the SFMA landings declined by about 6,400 mt, or 45 percent. Total landings for the fishery declined by approximately 4,400 mt, or 18 percent.

	MAY	JUNE	JULY	AUG.	SEP.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY 00 - APR 01	2000/2001*		1999/2000*		
	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	1000 Lbs	%	May00-Apr01 as a % of Target TAC	Target TAC 1000 Lbs	May99-Apr00 as a % of Target TAC	Target TAC 1000 Lbs
NORTHERN	1,438	2,044	2,033	2,209	2,141	2,659	2,202	2,092	2,382	1,757	2,246	2,528	25,731	60%	206%	12,507	171%	12,507
OTTER TRAWL	1,137	1,351	1,125	1,176	1,396	1,760	1,196	1,272	2,057	1,679	2,123	2,415	18,689	43%	149%		133%	
GILLNET	233	606	816	974	713	793	914	736	276	76	122	108	6,368	15%	51%		29%	
HOOK	0	0	0	0	0	0	0	0	0	0	0	0	1	0%	0%		0%	
OTHER GEARS	67	87	92	59	32	106	91	83	48	1	1	5	673	2%	5%		9%	
SOUTHERN	2,185	1,890	864	609	717	1,425	3,005	1,984	1,584	1,146	917	1,137	17,463	40%	131%	13,281	238%	13,281
OTTER TRAWL	295	262	211	193	492	973	1,736	618	682	904	624	460	7,451	17%	56%		89%	
GILLNET	1,488	1,134	217	35	33	233	1,077	1,046	760	139	182	506	6,850	16%	52%		115%	
HOOK	0	0	0	1	0	0	0	0	0	0	1	0	2	0%	0%		0%	
OTHER GEARS	402	494	437	380	192	218	191	319	142	102	110	171	3,158	7%	24%		33%	
ALL AREAS	3,623	3,935	2,897	2,818	2,858	4,084	5,206	4,076	3,966	2,903	3,163	3,665	43,193	100%	167%	25,788	205%	25,788
OTTER TRAWL	1,433	1,613	1,336	1,370	1,888	2,733	2,932	1,890	2,740	2,583	2,747	2,876	26,141	61%	101%		111%	
GILLNET	1,721	1,740	1,033	1,009	746	1,026	1,991	1,783	1,036	216	303	613	13,218	31%	51%		74%	
HOOK	0	0	0	1	0	0	0	0	0	0	1	0	3	0%	0%		0%	
OTHER GEARS	469	581	528	439	224	325	283	403	190	104	111	176	3,831	9%	15%		21%	
ALL AREAS																		
FY 2000/2001	3,623	3,935	2,897	2,818	2,858	4,084	5,206	4,076	3,966	2,903	3,163	3,665	43,193					
FY 1999/2000	7,315	6,405	3,208	3,108	2,586	4,495	4,923	4,438	3,345	4,592	4,713	3,851	52,979					
FY 1998/1999	7,386	6,039	4,008	3,354	3,605	4,538	6,367	5,208	3,807	5,170	4,811	5,312	59,605					

1. The three digit statistical areas defined below are for statistical and management purposes and may not be consistent with stock area delineation used for biological assessment.

Monkfish Stock Areas: Northern: 464-465, 467, 511-515, 521-522, 561-562

Southern: 525-526, 533-534, 537-539, 541-543, 611-639

2. Landings in live weight.
3. State landings for 2000 have been updated and are complete.
4. State landings for Connecticut are estimated for the January 2001 - June 2001 period.
5. Gear data are based on vessel trip reports.

* Fishing Year is May 1 through April 30.

Table 6. Fishing year (May 2000-April 2001) monkfish landings by Area, Gear and Month. Also showing monthly and total landings 1998-2000 (May-April)

Table 7 shows preliminary landings from the dealer reports by month and gear. Total landings reported by dealers were 19,521 mt (43.0 million lb). Dealer landings are not reported by area.

MONTH	OTTER TRAWL	SCALLOP DREDGE	GILLNET	HOOK	OTHER	TOTAL POUNDS
May	1,438,228	629,404	1,541,113	1,842	12,220	3,622,807
June	1,704,865	654,365	1,571,566	1,837	2,039	3,934,672
July	1,564,079	525,939	756,006	21,435	29,133	2,896,592
August	1,638,776	447,451	727,096	3,553	1,398	2,818,274
September	1,991,201	247,007	606,681	1,058	12,416	2,858,363
October	2,841,349	379,438	852,306	741	10,099	4,083,933
November	2,834,910	469,278	1,857,604	17,336	27,244	5,206,372
December	1,999,634	396,137	1,622,451	22,195	35,485	4,075,902
January	2,689,604	217,611	985,619	630	1,277	3,894,741
February	2,468,196	173,236	259,942	115	1,130	2,902,619
March	2,586,479	150,930	337,251	171	611	3,075,442

April	2,762,851	252,314	629,684	423	20,340	3,665,612
Sum (pounds)	26,520,172	4,543,110	11,747,319	71,336	153,392	43,035,329

Table 7. Preliminary monkfish landings (lb) from dealer reports for fishing year 2000-2001

In the NFMA, landings by gillnet gear increased by 90 percent, while trawls increased by 13 percent. Landings by other gear (preliminary dredges) declined by 48 percent. In the SFMA, landings by gillnet gear declined by 54 percent, while trawl landings fell 34 percent. Other gear landings in the SFMA declined 30 percent. The percentage of landings by gear in each year and area is shown in Table 8.

Percent of Total	Northern Fishing Area		Southern Fishing Area	
	FY 1	FY 2	FY 1	FY 2
Trawl	78%	73%	37%	43%
Gillnet	16%	25%	48%	39%
Other (dredge)	6%	3%	15%	18%

Table 8. Percent of total monkfish landings by gear for NMFA and SFMA in FY1 (May 1999-April 2000) and FY2 (May 2000-April 2001)

Figure 3 below shows monthly landings based on dealer reports for FY2000 for both areas combined. As usual, FY2000 landings peaked during the October-December period, when Asian demand for livers and European demand for monkfish are highest. The following two figures (Figure 4 and Figure 5) show monthly landings by gear for each area based on the VTR reports. In the NFMA, May 2000 was the month with lowest landings, while April 2001 was the month with highest landings. In contrast, in the SFMA May 2000 was one of the months with highest

landings, while April 2001 was one of the months with lowest. The large difference between May 2000 and April 2001 in both areas and the contrasting pattern between the NFMA and SFMA suggests that seasonal patterns of the fishery were masked by the effect of the transition from Year 1 to Year 2 regulations, when the trip limits were imposed in the SFMA.

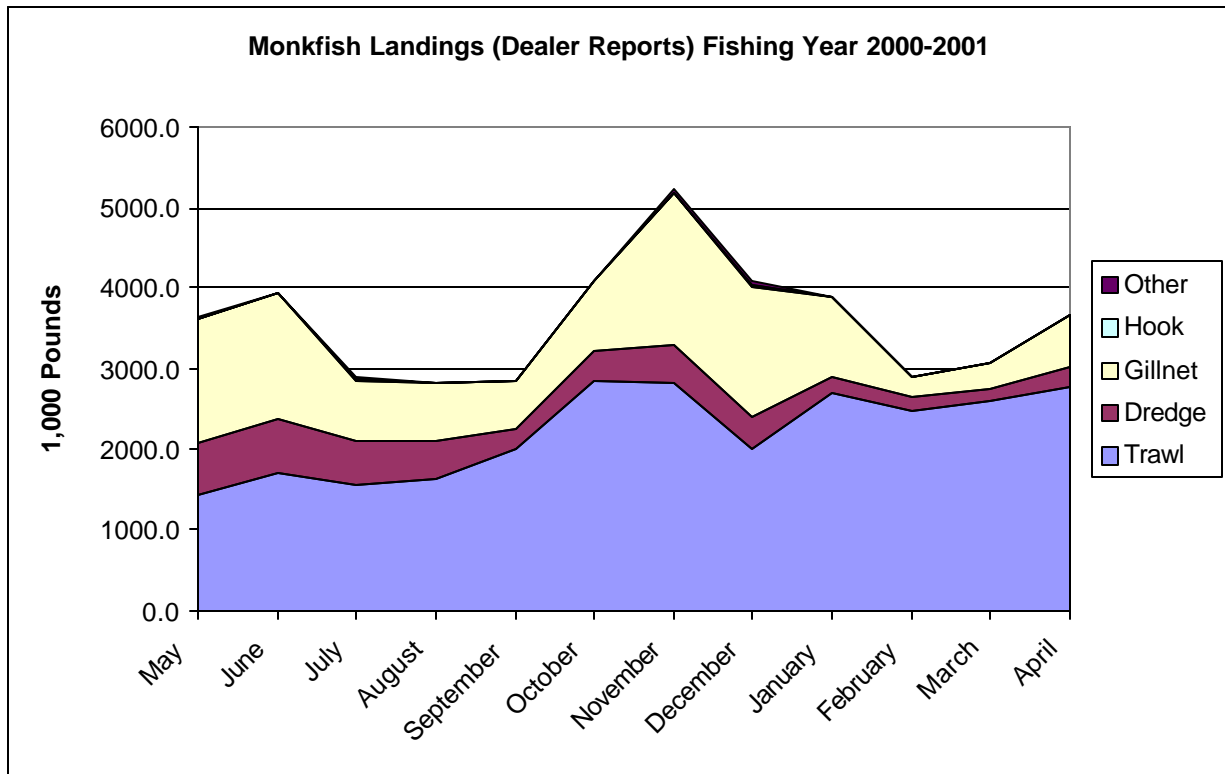


Figure 3. Monkfish landings by month (both areas combined)

Based on dealer reports for FY2000

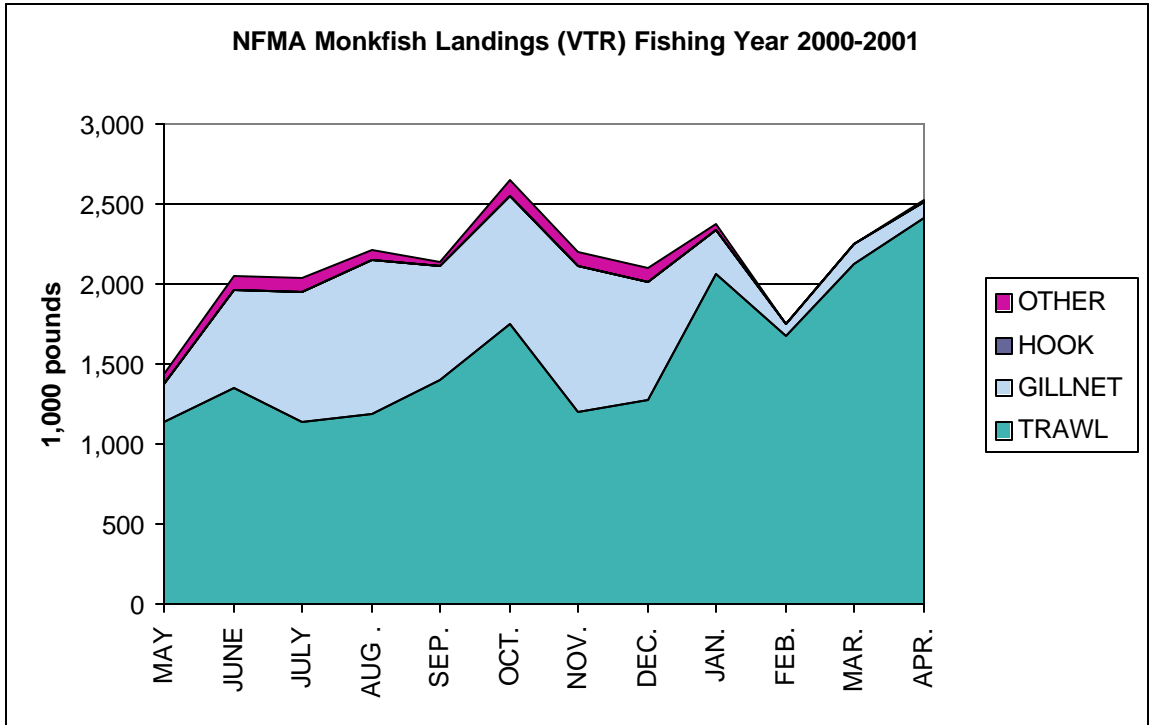


Figure 4. NFMA Monkfish landings (VTR) by month, FY2000

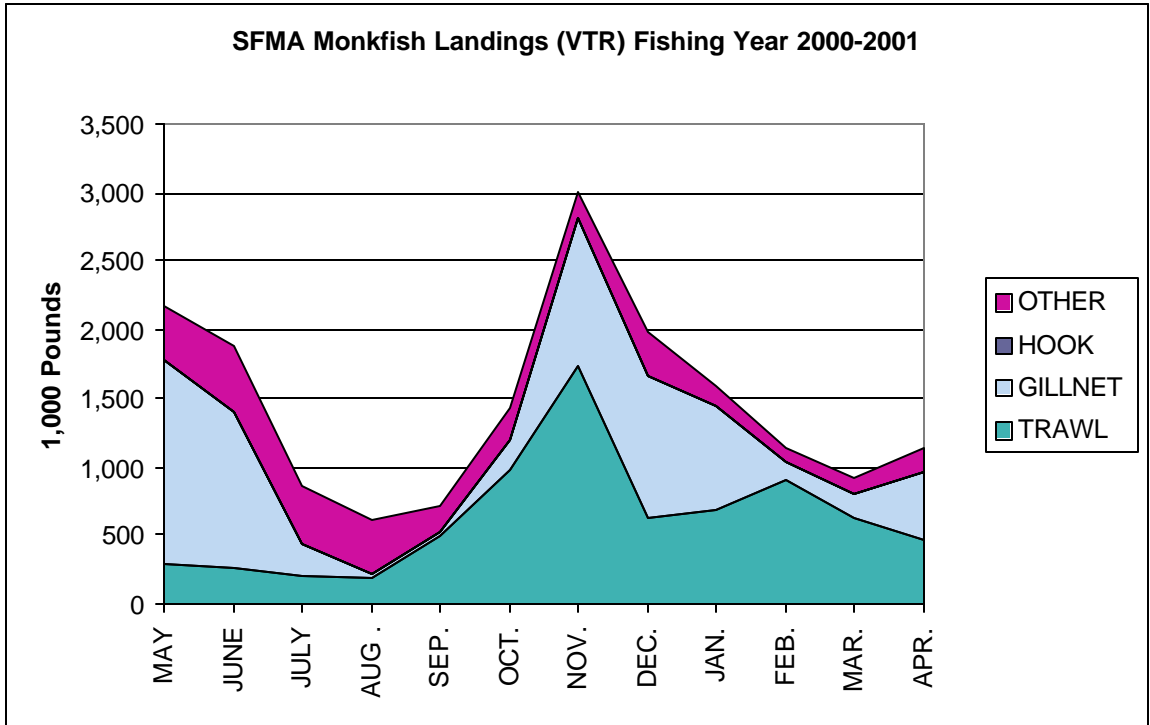


Figure 5. SFMA Monkfish Landings (VTR) by month, FY2000

4.2.2 Trends in Commercial Landings and Revenues

Trends in Commercial Landings and Revenues

The landings and revenue data in this section of the SAFE Report are presented only for vessels that were issued a federal monkfish permit for FY2000. Federal permits for monkfish did not exist prior to implementation of the FMP on November 8, 1999. However, in order to generate a consistent time series of data across fishing years 1995-2000, landings and revenues were only queried for vessels that have permits for the 2000 fishing year under the FMP. All data are landed weights from the NMFS "dealer weighout database" (tails are not converted to whole fish).

NOTE: Landings in this section are "landed weights", that is, weight of whole fish, tails and livers landed. These weights are not converted to "live weights" and, thus, do not match landings presented in other sections of this report.

Table 8 reports monkfish landings for the approximately 2,600 vessels issued a monkfish permit (limited access and open access) for the FY2000. Monkfish landings and revenues increased steadily and significantly during 1995-99, but declined in FY2000. Overall, landings (by landed weight) increased 41 percent and revenues increased 98 percent from FY1995 to FY1999, and declined by 9.0 and 3.7 percent, respectively in FY2000. In comparison, landings (when converted to live weight to correspond to the section above on commercial landings) declined by 18 percent in FY2000, reflecting a significant increase in the proportion of monkfish landed as whole fish rather than tails.

Fishing Year (May 1 - April 30)	Landings (1,000 lbs. landed wt.)	Revenues (\$1,000)
1995	17,759.3	23,435.6
1996	20,004.7	24,933.4
1997	20,686.4	28,707.7
1998	23,201.8	33,337.6
1999	25,049.1	46,421.6
2000	22,693.4	44,702.4

Table 8. Total Monkfish Landings (landed weight) and Revenue, 1995-2000, for vessels issued a monkfish permit during the 2000 fishing year

Table 9 presents landings of monkfish for vessels issued a monkfish permit for FY2000 by the home state indicated by the vessel owner in the vessel permit application. Vessels homeported in Massachusetts clearly dominated monkfish landings in 1995-99, averaging 10.5 million lb, followed by vessels from Rhode Island (3.5 million lb), New Jersey (2.7 million lb), and Maine 2.2 million lb). In FY2000, landings of vessels homeported in Massachusetts and New Jersey were near the previous five year average, while Rhode Island landings declined 43 percent and Maine landings increased 64 percent. North Carolina landings increased 600 percent in FY2000 compared to the 1995-99 average. Vessels homeported in Massachusetts have accounted for about half of the total landings in each of the past six years.

State	Thousands of Pounds of Monkfish					
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
CT	0	0	0	0	8	0
MA	10,649	9,250	10,006	11,528	11,399	10,370
MD	178.5	521	349	282	314	107
ME	1,820	1,934	2,091	1,961	3,193	3,614
NC	0	434	439	335	343	2,168
NH	389	432	563	511	1,037	1,254
NJ	1,212	2,219	2,296	3,673	4,121	2,691
NY	191	495	647	777	541	367
RI	2,790	3,968	3,603	3,445	3,600	1,996
VA	531	751	693	690	492	126
TOTAL	17,761	20,004	20,687	23,202	25,048	22,693

Source: NMFS Statistics Office, dealer weighout database

Table 9. Total monkfish landings, 1995-2000, by vessels issued monkfish permits for fishing year 2000, by homestate (landed weight)

4.2.3 Vessel information

The number of vessels by permit category in FY2000 is shown in Table 10. This information is broken down into those that did not report landings of any species (Type 1), those that only reported landings of species other than monkfish (Type 2), and those that reported landing at least one pound of monkfish (Type 3). In FY2000, 1,094 of the 2,596 permitted vessels (42%) reported monkfish landings on the VTR, while 725 vessels (mostly Category E) reported landings of other species only, and 777 (again, mostly Category E) vessels reported no landings of any species. In FY2000, 72 vessels that had no monkfish permit (including open access, Category E permits) reported at least one pound of monkfish landings.

Permit Categories	Vessel Type			
	1	2	3	Total
A	4	1	6	11
B	8	1	23	32
C	11	8	314	333
D	36	20	282	338
E	718	695	469	1882
Total	777	725	1094	2596
NO PERMIT	N/A	N/A	72	N/A

Table 10. Monkfish vessel permits by category and vessel type (no landings, landings other than monkfish only, monkfish landings) in FY 2000

The distribution of vessels with monkfish permits in FY2000 by length and by vessel type is presented in Table 11. Ninety seven percent of vessels with monkfish permits under 30 feet, and 69 percent of vessels between 30 feet and less than 50 feet, landed no monkfish. In the larger vessel sizes, over fifty feet, more than 60 percent of the vessels landed at least one pound of monkfish in FY2000.

Vessel Length	Vessel Type			
	1	2	3	Total
<30'	195	123	11	329
³30' & <50'	433	467	404	1304
³50' & <70'	85	72	269	426
³70' & <90'	47	46	354	447
³90'	17	17	56	90

Table 11. Distribution of vessels with monkfish permits by length and vessel type (no landings, landings other than monkfish only, monkfish landings) in FY 2000

Monkfish landings and revenues, and the percent of total landings and revenues for those vessels, are reported in Tables 12 and 13 based on vessels' monkfish permit category in the FY2000. As expected, Category A and B vessels are the most dependent on monkfish landings and revenues since those vessels, by definition, do not have either a scallop or Northeast multispecies limited access permit. On average during the 1995-1999 period, Category A vessels depended on monkfish landings and revenues for more than 60 percent of their total landings and about 70 percent of their total revenues, but with the implementation of effort controls (DAS and trip limits) in FY2000, the dependence declined to 39.7 percent (landings) and 55 percent (revenues).

In contrast, Category B vessels experienced an increased dependence on monkfish landings and revenues in FY2000, rising from an average of 16.8 percent of their total landings and 31 percent of their total revenues during the 1995-1999 period, to 32 (landings) and 54 percent (revenues) in FY2000. Category B vessels had a lower qualification criteria than Category A (24,900 lb of whole fish versus 166,000 lb from February 28, 1991 through February 28, 1995) and includes all vessels less than 51 GRT.

From FY1999 to FY2000, vessels in all permit categories experienced an average decline in the dependence on monkfish landings and revenues. On a percentage basis, Category A vessels had the largest drop in the monkfish percentage of total landings. In terms of the reduction in dependence on monkfish revenues as a percentage of total revenues, Category A and B vessels had a much larger decline than Category C and D vessels (vessels that hold Northeast multispecies or scallop permits). Vessels with Category E permits (incidental catch) have not been dependent on monkfish for a significant portion of their landings or revenues. Between FY1995 and FY2000, less than one percent of landings and less than two percent of revenues for Category E (open access) vessels came from monkfish.

Vessel Length Category	1,000 pounds, landed weight					
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
0-29 Feet	60.3	41.9	5.8	33.4	38.4	62.0
% of Total 0-29 Landings	11.2%	9.0%	1.2%	4.4%	6.3%	7.0%
30-49 Feet	4,904.6	5,982.9	5,895.2	7,950.6	9,899.5	9,235.5
% of Total 30-49 Landings	8.5%	10.4%	10.8%	13.4%	18.9%	17.2%
50-69 Feet	2,898.3	3,952.7	3,303.5	4,064.3	4,363.1	4,990.7
% of Total 50-69 Landings	3.7%	4.8%	3.1%	4.8%	5.3%	6.0%
70-89 Feet	7,803.8	8,384.8	9,762.9	9,359	9,329.8	7,392.2
% of Total 70-89 Landings	4.6%	4.8%	4.1%	4.2%	4.9%	3.8%
90+ Feet	2,092.3	1,642.4	1,719	1,794.4	1,418.3	1,013.1
% of Total 90+ Landings	2.4%	1.4%	1.3%	1.1%	1.6%	0.8%

Source: NMFS Statistics Office, dealer weighout database\

Table 12. Monkfish Landings, 1995-2000, as a Percentage of Total Landings by Vessel Length for Vessels Issued a Monkfish Permit During FY2000

Vessel Length Category	\$1,000, nominal (not discounted)					
	FY 1995	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000
0-29 Feet	60	43.2	13.2	45.3	76.2	98.0
% of Total 0-29	8.3%	8.1%	1.7%	5.1%	8.1%	9.5%

Revenues						
30-49 Feet	5,248.3	6,153.4	6,510.4	9,348.1	15,829.7	16,104.3
% of Total 30-49 Revenues	13%	15.1%	15.1%	20.4%	29.6%	29.9%
50-69 Feet	3,797.1	4,679.5	4,417.8	5,744.1	8,337.9	9,944.1
% of Total 50-69 Revenues	7.6%	8.7%	7.7%	10.5%	13%	13.9%
70-89 Feet	11,168.2	11,671.2	14,956.2	15,215.2	19,103.8	15,927.9
% of Total 70-89 Revenues	7.8%	7.5%	9.1%	9.3%	9.5%	7.1%
90+ Feet	3,162	2,386.1	2,810.2	2,984.9	3,074	2,628.1
% of Total 90+ Revenues	6.1%	4.1%	5%	5.7%	5.3%	4.1%

Source: NMFS Statistics Office, dealer weighout database

Table 13. Monkfish Revenues, 1995-2000, as a Percentage of Total Revenues by Vessel Length for Vessels Issued a Monkfish Permit During the FY2000

4.3 Fishing Communities

The communities most likely to be directly affected by the alternatives under consideration in this emergency action are defined as Primary or Secondary monkfish communities in the Monkfish SAFE report. Primary communities are defined as those averaging more than \$1 million in monkfish revenue from 1994-1997. Secondary communities are defined as those that averaged more than \$50,000 in monkfish revenues from 1994-1997.

Based on the information presented in the Monkfish SAFE report and the likely distribution of the impacts of the emergency action and alternatives considered, the following primary and secondary community groups have been identified as "communities of interest".

Primary Community Groups

- Portland, ME
- Boston, MA
- Gloucester, MA
- New Bedford, MA
- Long Beach/Barnegat Light, NJ
- Point Judith, RI

Secondary Community Groups

- Rockland, ME
- Port Clyde, ME
- South Bristol, ME
- Ocean City, MD
- Chatham, MA
- Provincetown, MA
- Scituate, MA
- Plymouth, MA
- Westport, MA
- Portsmouth, NH
- Point Pleasant, NJ
- Cape May, NJ
- Greenport, NY
- Montauk, NY
- Hampton Bays, NY
- Newport, RI
- Hampton, VA
- Newport News, VA

The distribution of monkfish permit holders by homeport and monkfish permit category for the six primary, 18 secondary, and "other" monkfish ports is presented in Table 14. The table includes FY2000 data as well as data for the current year as of September 30. Of the 2,596 monkfish permits issued in FY2000, 714 (28%) listed one of six primary monkfish ports as their home port, while 452 (17%) listed one of the secondary ports. The remaining 55 percent listed one of the other ports as homeports. Overall, 72 percent of the permits (1,863 permits) were Category E, open access permits. Of the 733 limited access monkfish permits (Categories A, B, C, and D, combined), 50 percent were issued to vessels homeported in one of the primary ports, 18 percent to vessels in one of the secondary ports, and the remaining 32 percent to vessels in other ports. Category E permits comprised 49 percent of the total permits in the primary ports, 71 percent in the secondary ports and 83 percent in the other ports.

HOMEPORT	FY 2000 by Category						FY 2001 by Category					
	A	B	C	D	E	TOTAL	A	B	C	D	E	TOTAL
PRIMARY PORTS	4	16	195	151	348	714	2	14	193	147	340	696
PORTLAND ME	0	1	10	16	17	44	0	1	10	12	19	42
BOSTON MA	1	2	46	47	137	233	0	1	42	46	127	216
GLOUCESTER MA	0	0	18	34	104	156	0	0	17	33	102	152
NEW BEDFORD MA	1	0	93	30	41	165	0	0	97	29	43	169
BARNEGATE LIGHT NJ	1	13	9	11	17	51	1	12	8	15	15	51
POINT JUDITH RI	1	0	19	13	32	65	1	0	19	12	34	66
SECONDARY PORTS	0	6	55	69	322	452	1	7	57	68	313	446
ROCKLAND ME	0	1	1	0	5	7	0	1	1	0	8	10
PORT CLYDE ME	0	0	3	3	5	11	0	0	5	3	4	12
SOUTH BRISTOL ME	0	0	2	2	5	9	0	0	2	2	5	9
OCEAN CITY MD	0	0	0	0	11	11	0	0	0	0	13	13
CHATHAM MA	0	0	0	11	47	58	0	0	0	11	37	48
PROVINCETOWN MA	0	0	0	5	11	16	0	0	0	6	10	16
SCITUATE MA	0	0	3	7	27	37	0	0	2	8	25	35
PLYMOUTH MA	0	1	0	1	13	15	0	1	1	1	14	17
WESTPORT MA	0	0	1	5	13	19	0	0	1	5	15	21
PORTSMOUTH NH	0	0	4	14	17	35	0	0	4	12	15	31
POINT PLEASANT NJ	0	3	2	1	22	28	1	3	2	1	22	29
CAPE MAY NJ	0	0	19	5	49	73	0	0	17	6	53	76
GREENPORT NY	0	0	1	1	4	6	0	0	1	0	4	5
MONTAUK NY	0	0	3	5	65	73	0	0	3	5	61	69
HAMPTON BAY NY	0	1	1	1	5	8	0	1	1	1	4	7
NEWPORT RI	0	0	2	5	13	20	0	1	2	5	12	20
HAMPTON VA	0	0	4	0	3	7	0	0	4	0	4	8
NEWPORT NEWS VA	0	0	9	3	7	19	0	0	11	2	7	20
OTHER NORTHEAST AND NON-NORTHEAST HOMEPORTS	8	10	91	128	1,193	1,430	7	7	84	115	1,153	1,366
TOTAL	12	32	341	348	1,863	2,596	10	28	334	330	1,806	2,508

Table 14. Monkfish permits by port, FY 2000 and 2001 (current year), showing primary, secondary and other ports.

5.0 Environmental Impacts of the Alternatives

5.1 Biological Impacts

The MMC met on September 6, 2001 and reviewed landings and NEFSC survey data through spring 2001. The MMC did not attempt to interpret the data beyond making a few general observations because it expected that these data and other relevant information would be fully analyzed in the context of the stock assessment scheduled for January, 2002. The rationale contained herein, therefore, contains information provided by the MMC (prior to the availability of the SAW), information provided by the SAW, and updates to trawl survey data subsequent to the SAW. All of these sources of information support the Council's recommended alternative, which is being implemented through this emergency action.

As noted, the TACs for monkfish were set in the FMP using F reference points and estimates of contemporaneous fishing mortality from SARC 23 (1997). The reference points and mortality rates were estimated using an equilibrium method

(Beverton-Holt length-frequency method) which depends on assumptions of constant recruitment and mortality, representative sampling of the length composition of the exploitable population, and an accurate estimate of maximum fish length. The length-based method was used for monkfish because there were no age data available at the time. However, the assumptions of the method probably are violated, especially with respect to constant recruitment and representative sampling of the length composition.

Fishing mortality reference points and estimates of contemporaneous F were recalculated during SAW 31 (October 2000) using updated data and different hypotheses, which were considered to be more reasonable, regarding the mean length at full selection to the fishing gear (survey or commercial). However, this resulted in negative estimates of $F_{\text{threshold}}$ for the NFMA, indicating that the F reference points currently in the FMP are not reliable indicators of stock status, with respect to exploitation rates.

The MMC noted that even though the TACs in Year 2 were exceeded, and no new measures were implemented in Year 3, the overall decline in landings in Year 2 coupled with increased or stable survey indices for 2000-2001 suggest that the stocks may have increased (NFMA) or stabilized (SFMA) in recent years. A plot of relative exploitation ratios (landings/survey biomass) for fishing years from 1995-2000, Figure 6, shows a significant decline in 2000. While this information is not conclusive, it provides some additional evidence to support this emergency action, since the direction of the trend in both areas for 2000 is what would be expected if the management program were having its intended effect.

The MMC also commented that the default measures may be overly restrictive, resulting in unnecessary economic and social impacts, especially for vessels with limited ability to fish for other species. The MMC agreed that it would not recommend the no-action alternative that allows the default measures to take effect. The MMC also agreed at its September 2001 meeting that it had little basis on which to develop adjustments to the current plan. Results from the most recent stock assessment (SAW 31) were insufficient to provide a technical basis for designing new measures or re-estimating TACs. The group felt that the TACs in the FMP for FY2002 are inadequate measures of fishery performance relative to the management objectives. The FMP includes target TAC levels

projected to be consistent with the fishing mortality objectives of the FMP. The planned reductions in the target TACs were based on achieving the $F_{\text{threshold}}$ in the fourth year of management. When the F thresholds were found to be invalid by SAW 31, the TACs also became invalid.

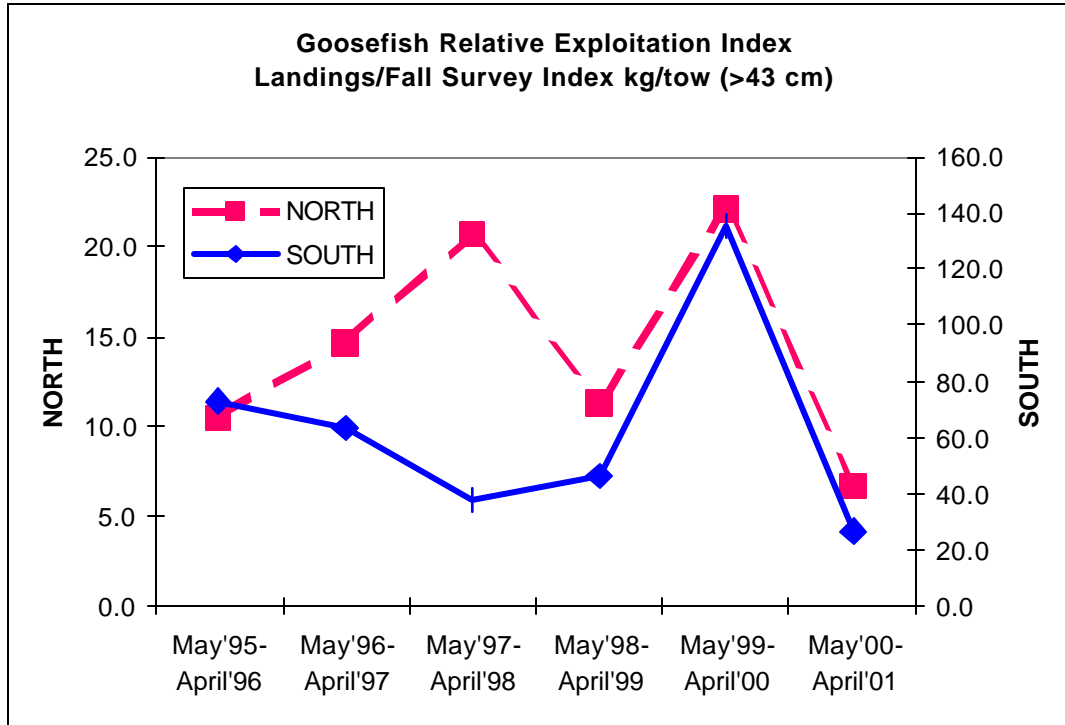


Figure 6. Relative exploitation index for fishing years 1995-2000 for NFMA and SFMA

A new assessment (SAW 34) was presented in January, 2002, incorporating data from an industry-based monkfish survey conducted by NMFS using commercial vessels. This survey provided a wealth of new information and allowed a more complete assessment of the monkfish resource than had been previously possible. Since the assessment information was not available during the development of Framework 1, the MMC had no basis for recommending action to change the plan when the new information could require another adjustment (either up or down) within a few months. The Councils considered the information from SAW 34 along with 2001 autumn survey data and calculations of FY2000 exploitation rates prior to making their final decision on Framework 1. The FMP authorizes the Councils to revise the F criteria through framework action. Because the results of SAW 34 were not available until late January 2002, when the Councils approved Framework 1, it was too late to include a revision to the F criteria in that framework.

SAW 34 investigated several methods for assessing stock status and provided suggestions for improved biological reference points based on yield per recruit analyses. The SARC recommended that $F_{\text{threshold}}$ be set at $F_{\text{max}}=0.2$, and F_{target} be set at $F_{0.1}=0.14$ for both management areas. The SAW did not conduct any short-term projections that would serve as a basis for setting TACs under the recommended $F_{\text{threshold}}$; however the assessment provided estimates of exploitable biomass during 2000 under a range of assumptions concerning net efficiency and effective tow distance in the industry-based survey. These resulted in a range of F estimates for calendar year 2000 depending on the method of calculation of F (using landings and exploitable biomass or landings plus discard and total biomass) and assumptions regarding tow distance and relative net efficiency. Within the range of estimates, SAW 34 attached the most significance to those estimates derived from the recent cooperative industry survey. The most probable estimates of F derived from the approach ranged from about 0.25 to about 0.4.

The F estimates are for calendar year 2000, which included only 7 months of the FMP Year 2 restrictions (effective May 2000) on monkfish DAS, trip limits and minimum landing size in the SFMA. During 1998 and 1999, 30-37% of the annual landings from the SFMA were made during the period Jan-April, thus to the extent that landings reflect effort, roughly a third of annual effort probably was expended in 2000 before DAS, trip limits and size restrictions were implemented. This suggests that even without further restrictions, fishing mortality estimates for calendar year 2001 will be lower than the F for calendar year 2000 since the Years 2 and 3 restrictions were in force for all of 2001.

Preliminary data from the NMFS fall survey for 2001 further supports this emergency action. These data, which were not available prior to the MMC report and initial Council meeting on Framework 1, show positive results for both management areas. In both stock areas, the reference points (i.e., biomass threshold) used to determine whether the stock is overfished are based on the three year running average of NMFS/NEFSC resource survey indices. In the SFMA, although the 3-year running average of the index (0.50 kg/tow) remains below the threshold (0.75 kg/tow), the 2001 index rose for the third consecutive year, to the highest level since 1986 (to 0.708 kg/tow). In the NFMA, while the 2001 index fell from the prior year, the 3-year average (1.79 kg/tow) moved above

the threshold (1.46 kg/tow), indicating that the northern stock is no longer overfished.

Although the no action and non-preferred alternatives would constrain effort below current levels, it is likely that under either of those alternatives the overall reductions in mortality would be offset substantially by increased discard mortality of monkfish caught incidental to other fishing activities. Since this emergency action is temporary, lasting 180 days with the possibility of an additional 180-day extension, the biological impact of any of the three alternatives is not likely to be significant since all alternatives constrain effort to current levels or lower. The Council will address the long-term rebuilding program in Amendment 2 currently in development and scheduled for implementation by the start of the 2003 fishing year.

5.2 Economic Impacts

The following economic analysis conducted for Framework 1 was performed for vessels that held a valid monkfish permit in FY2000 and that participated in the monkfish fishery. A total of five scenarios were analyzed; two from each of the preferred and non-preferred OY options and one for the no action alternative. However, only the three scenarios related to this emergency action (Tables 7, 8, and 9) are analyzed here; the emergency action, the non-preferred alternative, and the no action alternative. The trip limit model estimates the following: (1) Net returns for the no-action alternative (Year 4 default measures), and (2) net returns for FY2000 as if all vessels were operating under the court-ordered trip limits. The model does not account for changes in monkfish DAS. With this limitation the model will tend to underestimate the impacts of DAS reductions. In general, options containing higher DAS allocations with similar trip limits may be assumed to be less burdensome than options with lower DAS allocations even though the estimated impacts (model results) will be similar.

The baseline is simulated in each case for fishing years 1998, 1999, and 2000. Therefore, the number of observations for each cell does not represent unique vessels. This three-year period was used for several reasons. First, gillnets were constrained in FY2002 in some scenarios to levels below their current allowable limit and below any of the proposed limits,

and in some cases to levels above FY2000 levels. Using pre-FMP data allowed the model to use a time period when they were unconstrained, allowing for some prediction of vessel behavior under a range of trip limits. Second, using three years accounts for inter-annual variability in the analysis of activity at the vessel level. At an industry-level analysis there tends to be much less inter-annual variability in activity.

The model calculated the percent reduction in net income (that is, gross revenues less operating costs), summarized by permit category (categories A and B were combined due to small sample size), vessel length, homeport state (as reported in FY2000 permit application), and gear (defined as gear used for majority of monkfish income). These results are reported at the 10th, 25th, 50th, 75th, and 90th percentile in ranking of the relative reduction in total net income (from all species). The percentiles of the distribution of impacts are reported to reflect the fact that economic impacts tend to be skewed (sometimes greatly so) such that reported averages or similar measures of central tendency may not adequately reflect the full range of potential effects.

In the following tables and discussion, the percentages in each cell represent loss in net income (from all fishing), and a zero in any cell equates to full restoration of net income to FY2000 levels for that percentile of the observations. Full restoration of net income could be due to the way the specific alternative being analyzed affects the vessels relative to the no action alternative, or it could be because some vessels are not affected by the Year 4 defaults. If vessels are not impacted by the Year 4 defaults, observations would appear as zeros since even under the no action alternative, since there is no loss of net income to that percentile of vessels.

This emergency action would result in loss of income from fishing year 2000 levels for several vessel types. However, these losses are lower than the losses that would result from implementation of either the non-preferred or no action alternative. Under the emergency action, approximately 10 percent of vessels less than 50 ft (15.24 m) in length would experience a 3.4-percent or greater reduction (Table 15). However, 10 percent of these vessels would experience a 12.4-percent or greater reduction in income under the non-preferred alternative (Table 16), and a 54.6-percent or greater loss in

income under the no action alternative (Table 17). The income of vessels in other size categories would either not be affected by implementation of this emergency action, or would be reduced by less than 1 percent. Conversely, 10 percent of vessels greater than or equal to 50 ft (15.24 m) in length would experience some income loss under the non-preferred and no action alternatives. For example, vessels between 50 and 70 feet (21.34 m) in length would experience an income loss of 1.5 percent or greater under the non-preferred alternative, and a 10.2-percent or greater loss in income under the no action alternative.

Vessels that fish for monkfish but that are not eligible for limited access permits to fish for northeast multispecies or sea scallops (Category A and B permits) would be the vessels most severely impacted by the no action alternative. These vessels do not have the option of fishing under a northeast multispecies or scallop DAS. Under this alternative, 10 percent of these vessels would lose 100 percent of their net income from fishing. However, 10 percent of vessels in these categories would likely not be affected at all, because their landings during the 2000 fishing year were at or below the incidental catch levels allowed under the no action alternative. Impacts to these vessels would be substantially less under either the emergency action or non-preferred alternative. Under the emergency action, 10 percent of these vessels would experience no income loss, but 50 percent would experience an income loss of 3.1 percent or greater. Under the non-preferred alternative, 10 percent of these vessels would experience no income loss, but 50 percent would experience an income loss of 9.9 percent or greater.

Under any of the three alternatives, vessels that hold limited access permits for either multispecies or scallops in addition to monkfish (Category C and D) would be the least impacted of all vessels holding limited access monkfish permits. Under the emergency action, Category C vessels have a higher possession limit than Category D vessels. Ten percent of Category C vessels would experience a 0.8-percent or greater reduction in income, and 10 percent of Category D vessels would experience a 2.9-percent or greater reduction in income. Under the non-preferred alternative, Category C vessels also have a higher trip limit than Category D vessels. Category C vessels would experience a 3.7-percent or greater loss in income, while Category D vessels would experience a 5.9-percent or greater loss in income. Finally, the no action

alternative would result in 10 percent of Category C vessels having a 25.8-percent loss in income, while Category D vessels would experience a 43.3-percent loss in income.

Vessels homeported in New Jersey and Delaware (combined) would be the vessels most affected under all three alternatives. Under the no action alternative, 10 percent of these vessels would experience a 72-percent or greater loss in income, while 10 percent of these vessels would experience a 12.5-percent or greater loss in income under the non-preferred alternative. Under the emergency action, 10 percent of the vessels homeported in New Jersey and Delaware would experience only a 2.1-percent or greater loss in income. The least affected homeport states would be Virginia and Maryland (combined) and North Carolina where fewer than 10 percent or less of the vessels would experience any reduction in net income.

When viewed by gear type, gillnet vessels would be most negatively impacted by the no action alternative. Ten percent of gillnet vessels would experience a reduction in net income of 75.3 percent or more. However, 25 percent of gillnet vessels would have a reduction of 8.5 percent or more, and half of the vessels would not be impacted. Fewer than ten percent of dredge and hook vessels would be affected by the no action alternative, while 10 percent of trawl vessels (that hold a monkfish limited access permit and landed monkfish) would have a reduction in income of 9.5 percent or more. Gillnet vessels would be the only gear type impacted by the emergency action and non-preferred alternative. Under the non-preferred alternative, 10 percent of gillnet vessels would experience a 10.7 percent or greater reduction in income. Under the emergency action, these vessels would experience only a 2.8 percent or greater reduction in income.

Length	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
< 50 (n = 1268)	-3.4%	0.0%	0.0%	0.0%	0.0%
50 to < 70 (n =	0.0%	0.0%	0.0%	0.0%	0.0%
70 to < 90 (n =	-0.3%	0.0%	0.0%	0.0%	0.0%
>= 90 (n = 167)	0.0%	0.0%	0.0%	0.0%	0.0%
Permit Categories					
A & B (n = 78)	0.0%	0.0%	-3.1%	-2.3%	0.0%
C (n = 960)	-0.8%	0.0%	0.0%	0.0%	0.0%
D (n = 881)	-2.9%	-0.1%	0.0%	0.0%	0.0%
E (n = 1418)	0.0%	0.0%	0.0%	0.0%	0.0%
Home Port State					
MA (n = 1460)	-0.2%	0.0%	0.0%	0.0%	0.0%
ME (n = 319)	0.0%	0.0%	0.0%	0.0%	0.0%
NC (n = 180)	0.0%	0.0%	0.0%	0.0%	0.0%
NH (n = 148)	0.0%	0.0%	0.0%	0.0%	0.0%
NJ & DE (n = 361)	-2.1%	0.0%	0.0%	0.0%	0.0%
NY & CT (n = 346)	0.0%	0.0%	0.0%	0.0%	0.0%
RI (n = 256)	-1.5%	0.0%	0.0%	0.0%	0.0%
VA & MD (n = 267)	0.0%	0.0%	0.0%	0.0%	0.0%
Gear Groups					
Dredge (n = 518)	0.0%	0.0%	0.0%	0.0%	0.0%
Gillnet (n = 1022)	-2.8%	-0.7%	0.0%	0.0%	0.0%
Hook (n = 87)	0.0%	0.0%	0.0%	0.0%	0.0%
Trawl (n = 1710)	-0.1%	0.0%	0.0%	0.0%	0.0%

Table 15. Estimated reductions in income from FY2000 levels resulting from the emergency action

Length	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
< 50 (n = 1268)	-12.4%	-0.4%	0.0%	0.0%	0.0%
50 to < 70 (n =	-1.5%	-0.1%	0.0%	0.0%	0.0%
70 to < 90 (n =	-0.3%	0.0%	0.0%	0.0%	0.0%
>= 90 (n = 167)	0.0%	0.0%	0.0%	0.0%	0.0%
Permit Categories					
A & B (n = 78)	0.0%	-1.7%	-9.9%	-16.2%	0.0%
C (n = 960)	-3.7%	-0.2%	0.0%	0.0%	0.0%
D (n = 881)	-5.9%	-0.8%	0.0%	0.0%	0.0%
E (n = 1418)	0.0%	0.0%	0.0%	0.0%	0.0%
Home Port State					
MA (n = 1460)	-1.8%	-0.1%	0.0%	0.0%	0.0%
ME (n = 319)	0.0%	0.0%	0.0%	0.0%	0.0%
NC (n = 180)	0.0%	0.0%	0.0%	0.0%	0.0%
NH (n = 148)	-4.1%	-0.4%	0.0%	0.0%	0.0%
NJ & DE (n = 361)	-12.5%	-0.6%	0.0%	0.0%	0.0%
NY & CT (n = 346)	0.0%	0.0%	0.0%	0.0%	0.0%
RI (n = 256)	-1.6%	-0.3%	0.0%	0.0%	0.0%
VA & MD (n = 267)	0.0%	0.0%	0.0%	0.0%	0.0%
Gear Groups					
Dredge (n = 518)	0.0%	0.0%	0.0%	0.0%	0.0%
Gillnet (n = 1022)	-10.7%	-2.6%	0.0%	0.0%	0.0%
Hook (n = 87)	0.0%	0.0%	0.0%	0.0%	0.0%
Trawl (n = 1710)	-0.4%	-0.1%	0.0%	0.0%	0.0%

Table 16. Estimated reductions to income from FY2000 levels resulting from the non-preferred alternative

Length	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
< 50 (n = 1268)	-54.6%	-3.8%	0.0%	0.0%	0.0%
50 to < 70 (n =	-10.2%	-1.1%	0.0%	0.0%	0.0%
70 to < 90 (n =	-5.7%	-0.3%	0.0%	0.0%	0.0%
>= 90 (n = 167)	-1.6%	0.0%	0.0%	0.0%	0.0%
Permit Categories					
A & B (n = 78)	-100.0%	-97.5%	-59.8%	-21.0%	0.0%
C (n = 960)	-25.8%	-2.6%	0.0%	0.0%	0.0%
D (n = 881)	-43.3%	-5.7%	-0.4%	0.0%	0.0%
E (n = 1418)	-0.7%	0.0%	0.0%	0.0%	0.0%
Home Port State					
MA (n = 1460)	-19.7%	-2.8%	0.0%	0.0%	0.0%
ME (n = 319)	-12.8%	-2.4%	-0.3%	0.0%	0.0%
NC (n = 180)	0.0%	0.0%	0.0%	0.0%	0.0%
NH (n = 148)	-18.0%	-1.6%	0.0%	0.0%	0.0%
NJ & DE (n = 361)	-72.0%	-0.7%	0.0%	0.0%	0.0%
NY & CT (n = 346)	-6.5%	0.0%	0.0%	0.0%	0.0%
RI (n = 256)	-13.8%	-1.8%	0.0%	0.0%	0.0%
VA & MD (n = 267)	0.0%	0.0%	0.0%	0.0%	0.0%
Gear Groups					
Dredge (n = 518)	0.0%	0.0%	0.0%	0.0%	0.0%
Gillnet (n = 1022)	-75.3%	-8.5%	0.0%	0.0%	0.0%
Hook (n = 87)	0.0%	0.0%	0.0%	0.0%	0.0%
Trawl (n = 1710)	-9.5%	-1.5%	0.0%	0.0%	0.0%

Table 17. Estimated reductions to income from FY 2000 levels resulting from the no action alternative (Year 4 default measures)

5.3 Social Impacts of the Alternatives

A description of the affected human environment (monkfish fishermen and fishing communities) is presented in the Monkfish FMP and in Section 4.0 of this EA. A full discussion of the social impacts resulting from this emergency action, the non-preferred alternative, and the no action alternative

were presented in Section 5.3 of the EA for Framework 1. These impacts are summarized below.

5.3.1 Communities of interest

The fishing communities impacted by this emergency action are discussed in Section 4.5 of this EA. While these communities have been identified as communities of particular interest in this emergency action, it is still important to consider the impacts of these emergency measures across all communities. Social impacts can be defined as the changes that a fisheries management action may create in people's way of life (how they live, work, play, and interact), people's cultural traditions (shared beliefs, customs, and values), and people's community (population structure, cohesion, stability, and character). As such, social impacts may result from changes in flexibility, opportunity, stability, certainty, safety, and other factors that are not specific to any community, but oftentimes to any individual or entity experiencing changes resulting from a fishing regulation.

It is possible that the social impacts of some of the measures considered will not be experienced solely by one community group or another. Rather, it is likely that some impacts will be experienced across communities and gear sectors.

5.3.2 Impacts of Measures Considered

This section provides a discussion of the social impacts that are most likely to result from trip limits and DAS reductions, two of the management measures that form the basis for the alternatives considered in this emergency action. The details of the alternatives are discussed in subsequent sections of this assessment.

Trip Limits

In general, trip limits can affect the structure of a fishery. If the trip limit is set very low, the inshore sector of the fleet can sometimes manage to fish economically, while the offshore sector of the fleet cannot cover trip expenses. This can change the structure of financial rewards generated in the fishery and can ultimately change the short-term and long-term structure of the fishery itself. Fishermen's views on trip limits are usually based on what the limit will do to their income, not that a trip limit itself holds some socially or culturally undesirable characteristic. Trip limits are an

important component of the emergency management measures, as they constitute the main tool used to manage effort in the fishery. Most of the negative social impacts result from attitudes that form when fishermen are forced to discard their catch as a result of the trip limit.

Days-At-Sea Reductions

The impacts of reductions in DAS available to vessels for monkfish fishing can be significant, depending on the amount of allocated DAS that vessels use. The higher the percentage of allocated DAS usage, the more significant the impact of reducing DAS. Social impacts of DAS reductions tend to be more far-reaching and long-term in nature than other management measures like trip limits. Most impacts result from direct reductions in monkfish fishing opportunities and revenues for vessels that are most active in the fishery. Reductions in opportunities also relate to reductions in vessels' flexibility and can have direct impacts on fishing activity within a port, thereby impacting the shoreside facilities that are dependent on the affected vessels.

Other indirect impacts of DAS reductions manifest themselves in the form of reduced certainty and stability in the fishery and/or community, increased concerns about safety, problems finding and keeping crew, and overall increases in stress and reductions in feelings of job satisfaction. Indirect negative social impacts resulting from DAS reductions relate to adaptations that vessels make to compensate for reduced opportunity and reduce income, which can oftentimes increase their risk-taking and compromise their safety at sea. As income is reduced, some fishermen will try to minimize their operating costs in order to stay viable, sometimes reducing or eliminating crew, especially on smaller vessels. More owners of smaller vessels could be forced to fish alone for some or all of the year. Vessels may also try to maximize their remaining DAS by fishing during the winter when prices are usually better. Winter weather is more extreme and less predictable, increasing dangers that fishermen may encounter.

In addition, the disproportionate impacts of DAS reductions can create perceptions of inequity, which often exacerbate social impacts occurring in fishing communities. The groundfish fishery is an example of perceptions of inequity relative to the disproportionate impacts of DAS reductions. Some people think that DAS allocations from the Multispecies FMP Amendments 5 and 7 were unfair and created inequities and

tensions between sectors involved in the fishery. Those who switched from groundfish to other fisheries with the decline of the groundfish stocks feel that they were punished by not receiving their true historical allocation of DAS. Some fishermen view DAS allocations as unfair because those who depend most on the fishery were impacted the greatest, while others who never depended on the fishery were allowed to potentially increase their effort eighty-eight fold (88 Fleet DAS were allocated to any vessel that could prove one pound of groundfish landings). Many fishermen feel that they have sacrificed more than their share to rebuild the resource and are concerned about their future ability to realize the benefits of their sacrifices. Five years later, the fishery is facing proposals to reduce DAS allocations by another 30% and 37%. Similar to Amendments 5 and 7, this measure will again significantly affect those who are most active in and dependent on the multispecies fishery.

One concern about the long-term impacts of DAS reductions is that once allocated DAS are reduced, the DAS that are eliminated from the fishery will never be returned to the vessels. Whether or not this is the case cannot be predicted at this time, but it should be noted as a serious concern relative to long-term social and community impacts of DAS reductions. Also, as noted in the report from the social impact informational meetings, many communities are losing much of their shoreside support infrastructure. Some communities throughout the region have experienced losses of cutting houses, ice facilities, processing facilities, and other important services. While these losses may be due in part to external factors (healthy economy, shift towards recreation and tourism, etc.), additional losses may be experienced in some communities that depend on the monkfish fishery or on vessels that depend on the monkfish fishery.

On the other hand, in recent years some communities have experienced growth in infrastructure elements as a result of positive changes in fisheries such as scallops, herring, groundfish and summer flounder. Communities with diversified fisheries dependence, including monkfish, are more able to weather stock declines or management restrictions in individual fisheries. The long-term concerns about the effect of monkfish management relate to the ability of the community to remain actively involved in the monkfish fishery, and the ability of the community to support increased participation in the fishery as the stocks continue to recover. Maintaining

infrastructure elements even at minimal levels during periods of low activity significantly reduces the capital (financial and social) required to participate in a recovered fishery. Retaining DAS is viewed as essential to enabling monkfish dependent communities to maintain those elements, even at minimal levels.

5.3.3 Summary of impacts

The purpose of this emergency action is to suspend temporarily the implementation of the Year 4 default measures; temporarily amend the F criteria in the FMP to be consistent with the best available science; and temporarily implement management measures that are consistent with the revised F criteria, and prevent overfishing while minimizing economic impacts on fishermen. Those measures include the allocation of 40 DAS to vessels with limited access monkfish permits, and a revision to the trip limits in the SFMA in response to a recent Federal Court decision that eliminated the differential gear-based trip limits in the SFMA. It is important to note that this emergency action is temporary, lasting 180 with a possible 180-day extension. Long-term management and social/community impacts will be addressed in Amendment 2.

In the absence of this emergency action, the status quo would be the Year 4 default measures. This includes an elimination of the directed fishery (zero DAS) and reduced incidental catch limits. It is important to note that this status quo, as compared to a scenario where no management measures exist, is the baseline for comparison. Therefore, all options considered were compared to the Year 4 default measures (defined as the status quo).

One difficulty in assessing the social impacts of the alternatives considered as compared to the status quo is that in the short-term, social impacts will result from attitudes and perceptions about the new regulations, adaptations that fishermen make to the new regulations, and short-term losses in revenues.

Compared to the no action alternative, all of the alternatives considered are likely to produce positive short-term social impacts. Furthermore, based on public comments received on Framework 1, the majority of the fishing industry supports alternatives, other than the status quo alternative, proposed in Framework 1.

The management measure included in this emergency action that has the greatest chance of producing positive short-term social impacts is the change in trip limit for the gillnet category. Although this change may enhance the overall perception of the fairness of the management plan, the trawl sector is likely to be negatively affected by the redistribution of the TAC to accommodate the court-ordered evacuation of the gear-based trip limit differential. As such, communities with a higher dependence on gillnets to catch monkfish will see positive benefits from the proposed action, whereas trawl monkfish ports may see negative effects from this action, but even those effects are positive in comparison to allowing the Year 4 defaults to take effect.

The management measures considered in this emergency action that have the greatest chance of producing negative short-term (and most likely long-term) social impacts are DAS reductions. In the short-term, the decrease in allocated DAS would be offset by a higher trip limit. While most other measures considered in this framework would result in short-term impacts to some sectors, DAS reductions are likely to produce the broadest long-term impacts on affected vessels, families, and communities. It will be more difficult to adjust to reductions in monkfish opportunities (DAS) on which some vessels depend 100%. However, for those vessels with a limited access Northeast multispecies or scallop permit, the impact would be relatively less because they can still fish under a Northeast multispecies or scallop DAS. This emergency action does not reduce monkfish DAS, and therefore is not expected to produce negative short-term social impacts.

5.4 Essential Fish Habitat Assessment

The area affected by this emergency action has been identified as Essential Fish Habitat (EFH) for species managed by the FMPs for Atlantic Surf Clam and Ocean Quahog; Northeast Multispecies; Monkfish; Atlantic Herring; Atlantic Sea Scallop; Summer Flounder, Scup, and Black Sea Bass; Atlantic Mackerel, Squid, and Butterfish; Bluefish; Spiny Dogfish; Tilefish; Atlantic Billfish; and Atlantic Tunas, Swordfish, Sharks. Amendment 1 to the monkfish FMP (Omnibus EFH Amendment) provides a comprehensive description of the physical environment in which monkfish occur, and an assessment of the impacts to habitat resulting from a variety of fishing practices, including the three principle monkfish gears: Otter trawls, gillnets, and scallop dredges. A full

description the relationship between gear types and habitat impacts in relation to the monkfish fishery is presented in Section 5.4.1 of the EA for Framework 1.

5.4.1 Habitat impacts related to the emergency action

This emergency action will implement no changes to the measures in place during the 2000 and 2001 fishing years in the NFMA, and implement trip limits in the SFMA of 550 lb (tail weight, per DAS) for limited access Category A or C vessels, and 450 lb (tail weight, per DAS) for limited access Categories B or D vessels. This emergency action will also allocate 40 DAS to all limited access vessels, which is consistent with the number of DAS allocated during Years 2 and 3 of the FMP.

When compared to the measures in place during the 2000 and 2001 fishing years, this action essentially results in a lower trip limit for most vessels fishing in the SFMA, although it represents an increase for gillnet vessels from the 300 lb (tail weight per DAS) trip limit they were allocated in 2000, but a decrease from the 1,500 lb and 1,000 lb (tail weight per DAS) trip limits they now have under the recent Federal Court Order. Gillnetters may reduce the number of nets deployed to accommodate for the reduced trip limits. In addition, trawl vessels may reduce their monkfish trips since the reduction in trip limits may make it less profitable for the directed offshore monkfish fishery to operate. Furthermore, the results of the recent Federal Court Order in (Conservation Law Foundation (CLF) et al. v. Evans; December 28, 2001) will limit the ability of monkfish trawl vessels that possess limited access Northeast multispecies permits to redirect those monkfish days not being used back to groundfish. Generally, changes to measures such as trip limits would not be expected to have a direct effect on the habitat of the region. The trip limits being implemented in this emergency rule could have an indirect effect on the habitats within the monkfish fishing area by controlling the amount of fishing effort associated with each DAS, assuming that fishing effort ceases as soon as the trip limit is reached and does not continue with the intent of "highgrading." However, this emergency action makes no direct changes to allocated fishing effort (through the DAS program) and, therefore, is not expected to have an effect on the overall amount of fishing effort expended in the Gulf of Maine, Georges Bank or the Mid-Atlantic. With no change to the effective fishing effort,

there can be no assumed reductions in impacts to EFH. However, when compared to last year's measures, none of the measures contained in this emergency rule suggest any increase in the potential adverse effects to any EFH associated with the fishing activities managed under the FMP above the baseline established with the approval of the Omnibus EFH Amendment in March 1999.

5.4.2 Habitat impacts related to the non-preferred alternative

The non-preferred alternative would adjust trip limits and DAS in both management areas to achieve the target TACs established for Years 2 and 3 of the FMP. As stated in Section 5.4.1, changes to trip limits are not expected to have a direct effect on habitat. However, trip limits could have an indirect effect on the habitats within the monkfish fishing area by controlling the amount of fishing effort associated with the amount of DAS allocated to limited access vessels. As such, implementation of the non-preferred alternative would not be expected to have any direct effect on the habitat of the region.

5.4.3 Habitat impacts of the no action alternative

This alternative would result in the continued implementation of the Year 4 default measures in the FMP, which became effective on May 1, 2002. Relative to the emergency action, there are no changes to the level of adverse effects to EFH expected under the status quo alternative. This is due to the fact monkfish DAS are eliminated under this alternative, although certain vessels are still able to fish under their Northeast multispecies or scallop DAS allocations.

Monkfish DAS are not allocated in addition to Northeast multispecies and scallop DAS. As a result, reductions in monkfish DAS will only affect the effort associated with those vessels holding Category A or B permits; vessels that do not possess a limited access Northeast multispecies or scallop permit. There are 54 vessels that currently hold Category A or B limited access monkfish permits in comparison to 650 vessels that hold Category C and D permits. Although the status quo alternative would reduce fishing effort by approximately 1,600 monkfish DAS, this amounts to less than 6

percent of the total DAS allocated to monkfish limited access vessels. Furthermore, vessels affected by the default measures could shift to other fisheries that utilize gear known to impact EFH. Such a shift in fishing effort would likely result in little to no decrease in adverse impacts to EFH. Therefore, it is not possible to assess with any certainty any significant positive effects on EFH due to maintaining the status quo measures.

5.4.4 Conclusions

This action in the context of the fishery as a whole will not have any additional adverse impacts to EFH that have not already been analyzed; therefore an EFH consultation is not required.

After considering the extent of adverse impacts as discussed above, and taking into account the short-term and long-term costs to the fishery and its EFH, NMFS concluded that it was impracticable to impose additional measures to minimize the impacts of this emergency action on EFH, particularly given its limited scope and duration.

5.5 Impacts to threatened or endangered species, and other protected resources

A complete discussion of the impacts of this emergency action and the alternatives considered on threatened or endangered species, and other protected resources is presented in Section 5.5 of the EA for Framework 1.

On March 7, 2002, a formal section 7 consultation under the ESA was initiated for Framework 1. NMFS determined that reinitiation of the section 7 consultation was necessary, given that the measures contained in Framework 1 could result in adverse effects to ESA-listed cetaceans and sea turtles that were not considered during the June 14, 2001, consultation on the FMP. Because the measures contained in this emergency rule reflect those proposed in Framework 1, the Biological Opinion (BO) prepared as part of that consultation is applicable to this action and incorporated herein. The BO for Framework 1 dated May 14, 2002, concluded that the proposed action is not likely to result in jeopardy to any ESA-listed species under NMFS' jurisdiction. Because takes of sea turtles were expected to occur under Framework 1 measures, an Incidental Take Statement (ITS) was issued in conjunction

with the BO. This ITS anticipates the take of two loggerhead sea turtles (lethal or non-lethal), and up to two non-loggerhead turtles (green, leatherback, or Kemp's ridley) taken either lethally or non-lethally in Year 4 of the fishery as a result of entanglement in monkfish gear.

5.6 Impacts to Marine Mammals

NMFS has reviewed the impacts of this emergency action on marine mammals. Because this action maintains landing and effort at existing levels, NMFS has concluded that this management action is consistent with the provisions of the Marine Mammal Protection Act, and will not alter existing measures to protect the species of marine mammals likely to inhabit the monkfish management unit.

5.7 Cumulative impacts

5.7.1 Emergency action

The emergency action maintains monkfish landings at the level of landings that occurred during the 2000 fishing year. As a result, this action will maintain fishing effort at or below existing levels. Based on the results of SAW 34, maintaining effort at this level is expected to end overfishing in 2002, as specified in the FMP. Furthermore, NMFS has implemented restrictive measures for the Northeast multispecies fishery in response to a Federal Court Order (CLF et al. v. Evans). These measures are likely to reduce fishing effort on the monkfish resource, particularly in the NMFA where measures are expected to be more restrictive. Therefore, this action in the Northeast multispecies fishery is likely to have positive implications for the monkfish resource.

As stated in Section 5.3, the reduction in trip limits in relation to current management measures for trawl vessels fishing in the SFMA may adversely impact these vessels; in particular those vessels that participate in the offshore trawl fishery. However, the economic analysis presented in Section 5.2 indicates that the emergency action will have less of an impact on vessels than the non-preferred alternative or the no action alternative. Any efforts to reduce fishing effort in the multispecies fishery may further increase any social or economic impacts that result from the implementation of this emergency rule.

5.7.2 Non-preferred Alternative

This action would reduce fishing effort to achieve the target TAC level established for Years 2 and 3 of the FMP. This would result in a reduction in overall effort compared to fishing year 2001 levels. In addition, any efforts to reduce fishing effort in the multispecies fishery is likely to further any biological benefits resulting from this action.

The social and economic impacts resulting from the implementation of the non-preferred alternative would be greater in relation to the emergency action due to the lower trip limits, but less than the impacts resulting from maintaining the restrictive Year 4 default measures. Similar to the emergency action, these impacts are likely to increase as a result of any restrictive management measures implemented in the multispecies fishery.

5.7.3 No Action Alternative

This action eliminates the directed monkfish fishery, and establishes more restrictive incidental catch limits for most fishing sectors in both management areas through the continued implementation of the restrictive Year 4 default management measures. This would result in a substantial reduction in directed overall effort on monkfish compared to fishing year 2001 levels. As with the emergency action and the non-preferred alternative, the implementation of restrictive management measures in the Northeast multispecies fishery would likely increase the potentially significant biological benefits of maintaining the default measures.

Substantial social and economic impacts would likely result from the continued implementation of the Year 4 default measures. Because the no action alternative eliminates the directed monkfish fishery, the majority of monkfish landings would occur in conjunction with the scallop or Northeast multispecies fisheries. Therefore, any reductions in fishing effort in either the Northeast multispecies or scallop fishery would further increase the social and economic impacts resulting from this action.

6.0 Magnuson-Stevens Fishery Conservation and Management Act

The following provides a summary of this emergency action's compliance with the National Standards of the Magnuson-Stevens

Act.

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.

This emergency action temporarily amends the F criteria in the FMP to be consistent with the recommendation contained in the most recent stock assessment (SAW 34), and implements measures proposed in Framework 1 because, with the amendment of the F criteria in the FMP, these measures are consistent with the best available scientific information. This emergency rule temporarily suspends the default management measure contained in the FMP; sets optimum yield and management area target TACs for Year 4 at the level of landings in Year 2; allocates 40 monkfish DAS to monkfish limited access vessels; and adjusts the monkfish trip limits as needed to achieve the TACs while taking into consideration the effect of a Federal Court Order vacating differential gear-based trip limits (for trawl and gillnet vessels). These measures maintain the FMP objective of ending overfishing in 2002 since, to the extent it can be estimated, setting the target TAC for the 2002 fishing year based on 2000 landings is consistent with the amended $F_{\text{threshold}}=0.2$. Moreover, with stock survey indices showing increasing biomass, F should decrease further if monkfish catches remain stable.

2. Conservation and management measures shall be based upon the best scientific information available.

This emergency action is based upon the results and recommendation of SAW 34, the most recent stock assessment on monkfish. Therefore, this action is based on the best and most current scientific information available on the monkfish resource.

3. To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

This emergency action does not change the management unit and stock management areas established by the Monkfish FMP in 1999.

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.*

The measures contained in this emergency rule do not discriminate between residents of different states. This action retains all of the management measures in place for the 2001 fishing year, but adjusts the trip limits under a Monkfish DAS in the SFMA that apply to trawl and gillnet vessels so that they are equivalent. As a result, this action eliminates the gear-based trip limit differential in the SFMA that was implemented in the FMP. This action responds to a recent Federal Court Order that found the initial trip limits for the SFMA in the FMP in violation of this 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.*

This emergency action provides the widest range of opportunity for monkfish vessels to utilize the resource within the conservation constraints of the rebuilding plan. As with the previous national standard, NMFS is adjusting the trip limits under a monkfish DAS in response to a Federal Court Order that found the initial trip limit program (specifically, certain gear-based differential trip limits) to be in violation this National Standard. While this adjustment has the effect of reallocating economic opportunity among gear groups, the purpose of adjusting the trip limits in the SFMA is to become compliant with the Federal Court Order.

6. *Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.*

This emergency action makes adjustments to trip limits under a monkfish DAS in the SFMA based on the findings of a Federal

Court Order that invalidated the justification for gear-based differential trip limits implemented in the FMP. This emergency action does not alter any other management measures in effect during the 2000 and 2001 fishing years, including the incidental catch allowance when not fishing under a monkfish DAS. The trip limits (directed or incidental) that are unchanged by this action are because NMFS recognizes the different characteristics of the fisheries that catch monkfish directed or incidentally.

7. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

NMFS chose the recommended action from a range of alternatives based on the public comments received on Framework 1, and the analysis of economic impacts prepared for that action. The information indicated that the measures contained in this emergency action will have the least negative economic impact on an industry-wide basis.

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.

NMFS considered the social and community impacts of a range of alternatives based on the analysis conducted for Framework 1. The alternative selected for this emergency action retains the DAS allocation in effect during the 2000 and 2001 fishing year, which would minimize the impact of this action on shoreside infrastructure and provide the maximum opportunity for vessels to engage in monkfish fishing within the conservation limitations of the rebuilding program.

9. Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

This action directly minimizes bycatch while allowing for continued stock rebuilding through the temporary suspension of

the Year 4 default management measures and implementation of management measures that are based upon the best available information on the status of the monkfish stock. Under the Year 4 default measures, the directed monkfish fishery is completely eliminated, and vessels that previously participated in that fishery are expected to target other species. As such, the default measures are expected to increase bycatch and bycatch mortality, providing no improved conservation to the stock. Given the scope and context of this emergency action, which is of limited duration and is consistent with the factors regarding practicality in the National Standard Guidelines, it is not practicable to implement any additional measures to minimize bycatch.

NMFS is committed to improving bycatch assessment, as evidenced by the settlement agreement entered into with the other litigatory parties in CLF v. Evans. However, to effectively address bycatch assessment concerns would require a global set of measures applicable to all of the Northeast region's fisheries, because most vessels in the region are involved in a variety of fisheries even during any one fishing trip. It is beyond the scope and context of this emergency action to require a global system of measures to be established to improve bycatch monitoring, assessment and reduction in only one fishery.

10. Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

During the development of Framework 1, the Councils received public comment in support of the retention of 40 DAS versus the implementation of higher trip limits and lower DAS from fishermen that cited their concerns over safety at sea. According to the industry commentators, maximizing opportunity reduces the pressure on fishermen to make choices on where and when to fish that might compromise vessel safety. Based on the industry comments on Framework 1, NMFS has chosen an alternative that allocates 40 DAS, thereby providing the maximum number of DAS to fish for monkfish within the conservation limitations of the rebuilding program.

7.0 List of Preparers

This document was prepared through the cooperative efforts of the staff of the Northeast Regional Office (NERO) and the

Northeast Fisheries Science Center (NEFSC) of NMFS.
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8.0 List of Agencies and Persons Consulted

The NEFSC was consulted in preparing this EA.

9.0 Finding of No Significant Impact (FONSI)

National Oceanic and Atmospheric Administration Order (NAO) 216-6 (revised May 20, 1999) provides nine criteria for determining the significance of the impacts of a proposed action. These criteria are discussed below:

1. *Can the proposed action be reasonably expected to jeopardize the sustainability of any target species that may be affected by the action?*

The proposed action is not expected to jeopardize the sustainability of any target species that may be affected by the action. This action incorporates the best available science into the FMP by utilizing the results of SAW 34 to formally amend the overfishing criteria in the FMP. Based on this scientific information, it is appropriate to maintain fishing effort at the same level as fishing year 2000, or Year 2 of the FMP. According to the results of SAW 34, which are hereby incorporated into the FMP, maintaining effort at this level of landings is expected to end overfishing in 2002, as specified in the FMP.

2. *Can the proposed action be reasonably expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in FMPs?*

The proposed action is not expected to allow substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in the FMP. The area affected by the proposed action in the monkfish fishery

has been identified as EFH for species managed by the FMPs for Atlantic Surf Clam and Ocean Quahog; Northeast Multispecies; Monkfish; Atlantic Herring; Atlantic Sea Scallop; Summer Flounder, Scup, and Black Sea Bass; Atlantic Mackerel, Squid, and Butterfish; Bluefish; Spiny Dogfish; Tilefish; Atlantic Billfish; and Atlantic Tunas, Swordfish, and Sharks. The proposed action will modify the trip limits for trawl and non-trawl vessels in the SFMA to be equivalent while achieving 2000 landing levels. The net result is a decrease in the trip limit for the trawl vessels and a slightly increased trip limit for non-trawl (i.e., gillnet) vessels that fish in the SFMA. Therefore, this action is likely to decrease trawl gear effort in the SFMA in comparison to the 2001 fishing year, the gear type most likely to adversely affect coastal and ocean habitats and/or EFH. Because fishing effort by trawl vessels is expected to remain constant or decrease in comparison to the 2001 fishing year, the proposed action in the context of the fishery as a whole will not have an additional adverse impact to EFH. Therefore, a new EFH consultation was determined not to be necessary.

3. Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

The proposed action is not expected to have a substantial adverse impact on public health or safety. The impact of the proposed action may be greater on trawl vessels operating in the SFMA that fish further from shore because the decreased trip limits for this fishing sector may make it no longer profitable. As a result, these vessels are likely to fish closer to shore, potentially reducing time at sea. Reduced time at sea could have a positive impact on the health and safety of the fishermen, potentially leading to positive impacts to their families and the community. However, fishing close to shore could result in potential gear conflicts with other fishermen that traditionally fish in these areas. This could result in negative impacts to the health and safety of monkfish fishermen, their families and the community. However, the proposed trip limits would be in effect for only one year while the Council develops revised management measures in conjunction with revised overfishing definitions and a revised stock rebuilding schedule through Amendment 2 to the FMP.

4. Can the proposed action be reasonably expected to have an

adverse impact on endangered or threatened species, marine mammals, or critical habitat of these species?

A formal section 7 consultation under the ESA was initiated for Framework 1. NMFS determined that reinitiation of the section 7 consultation was necessary, given that the measures contained in Framework 1 could result in adverse effects to ESA-listed cetaceans and sea turtles that were not considered during the June 14, 2001, consultation on the FMP. Because the measures contained in this emergency rule reflect those proposed in Framework 1, the Biological Opinion (BO) prepared as part of that consultation is applicable to this action and incorporated herein. The BO for Framework 1 dated May 14, 2002, concluded that the proposed action is not likely to result in jeopardy to any ESA-listed species under NMFS' jurisdiction. Because takes of sea turtles were expected to occur under Framework 1 measures, an Incidental Take Statement was issued in conjunction with the BO. In addition, a memo has been prepared for the record stating that NMFS has determined, under Section 7(d) of the ESA, that there will be no irreversible or irretrievable commitment of resources that would foreclose the formulation or implementation of any reasonable and prudent alternatives during the reinitiation of the ESA Section 7 consultation for the monkfish fishery.

5. Can the proposed action be reasonably expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

The proposed action is not expected to result in cumulative effects on target or non-target species. This action is temporary, lasting only one year, and proposes to maintain fishing effort at or below fishing year 2001 levels. The only fishing sector to be potentially adversely impacted by the proposed measures is the offshore trawl fishery. According to industry representatives, the proposed measures will essentially eliminate this fishery since the allowable trip limits in the SFMA would not cover the cost of an offshore trip. As a result, the proposed action could result in offshore trawl vessels shifting their effort to other species, such as summer flounder, scup, or black sea bass. However, existing constraints in those fisheries, such as limited vessel participation (moratorium permit system) and fishing quotas, would restrict the amount of effort to be displaced into those fisheries, thereby minimizing the adverse effects

of the proposed action on those fishery resources. When compared to the default measures currently in place, this action reduces substantially the likelihood of larger vessels shifting to other fisheries.

6. *Can the proposed action be reasonably expected to jeopardize the sustainability of any non-target species?*

The proposed action is not expected to jeopardize the sustainability of any non-target species. As discussed in number 5, offshore trawl vessels targeting monkfish may shift their fishing effort to other fisheries. However, sufficient constraints exist in those fisheries to minimize the ability of monkfish trawl vessels to redirect their fishing effort to a previously non-targeted fishery to the extent that the shift in effort would jeopardize the sustainability of that resource. Furthermore, the proposed measures would last only one year, likely resulting in any redirection of effort to be limited in duration.

7. *Can the proposed action be expected to have a substantial impact on biodiversity and ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?*

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area because the proposed action would maintain fishing effort at or below fishing year 2001 levels.

8. *Are significant social or economic impacts interrelated with significant natural or physical environmental effects?*

As discussed in Section 5.0 of this EA, the proposed action is not expected to result in significant social or economic impacts, or significant natural or physical environmental effects not already analyzed. Therefore, there are no significant social or economic impacts interrelated with significant natural or physical environmental impacts. This action alleviates social and economic impacts resulting from the default measures.

9. *To what degree are the effects on the quality of the human environment expected to be highly controversial?*

The effects of this rule are somewhat controversial because they are based upon relatively new science, and the Framework 1 analyses about which some environmental groups have expressed concern. On April 19, 2002, comments were received from Oceana and the American Oceans Campaign, and other persons concerning the proposed rule to implement Framework 1. The effects are not "highly" controversial, however, because they are well-grounded in the best scientific information available and there are no significant opposing viewpoints of which NMFS is aware.

FONSI Statement

In view of the analysis presented in this document and in the EIS for the FMP, the measures contained in this emergency rule to temporarily amend the FMP will not significantly affect the quality of the human environment, with specific reference to the criteria contained in Section 6.02 of NOAA Administrative Order NAO 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act (NEPA). Accordingly, the preparation of a Supplemental Environmental Impact Statement for the proposed action is not necessary.

Assistant Administrator for
Fisheries, NOAA

Date

10.0 References

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Science Center Reference Document 02-06. January.

11.0 Regulatory Impact Review (E.O. 12866)

NMFS requires the preparation of a Regulatory Impact Review (RIR) for all regulatory actions that either implement a new FMP or significantly amend an existing plan. This RIR is part of the process of preparing and reviewing FMPs and provides a comprehensive review of the changes in net economic benefits to society associated with proposed regulatory actions. This analysis also provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives that could be used to solve the problems. The purpose of this analysis is to ensure that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost-

effective way. This RIR addresses many items in the regulatory philosophy and principles of Executive Order (E.O.) 12866. It also includes a certification under the Regulatory Flexibility Act (RFA) stating that the proposed rule, if adopted, will not have a significant economic impact on a substantial number of small entities.

11.1 Description of Management Objectives

The goals and objectives of the management plan as stated in Section 3.4 of the Monkfish FMP are:

1. to end and prevent overfishing; to rebuild and maintain a healthy spawning stock
2. to optimize yield and maximize economic benefits to the various fishing sectors
3. to prevent increased fishing on immature fish
4. to allow the traditional incidental catch of monkfish to occur.

This emergency action is consistent with, and does not modify these goals and objectives.

11.2 Description of the Fishery

Section 6.4 of the FMP contains a detailed description of the monkfish fishery. The Monkfish SAFE report contains an updated description of the fishery using the best and most current data available.

11.3 Statement of the problem

This emergency rule is necessary to reduce further economic and biological waste resulting from the implementation of the restrictive Year 4 default management measures in the FMP. The Year 4 default management measures that went into effect on May 1, 2002, have eliminated the directed monkfish fishery by allocating zero days-at-sea (DAS), and have reduced incidental monkfish catch limits in other fisheries. Any further delay in amending the F criteria to be consistent with those recommended by SAW 34, and in implementation of the measures contained in Framework 1, would continue to unnecessarily burden monkfish vessels and monkfish-dependent communities, and would likely cause wasteful bycatch of monkfish in other fisheries. The results of SAW 34 indicate that the Year 4 default management measures are far more

restrictive than necessary to achieve the FMP objective of eliminating overfishing by 2002. This emergency rule is consistent with NMFS' Policy Guidelines for the Use of Emergency Rules found at 62 FR 44421, et seq. (August 21, 1997).

11.4 Description of the alternatives

Section 3.0 of the EA contains a description of the alternatives considered.

11.5 Economic Analysis

Section 5.2 of the EA contains a description of the economic impacts of the emergency action, non-preferred alternative and no action alternative. An additional social impact analysis is presented in Section 5.3.

11.6 Determination of significance under E.O. 12866

NMFS Guidelines provide criteria to be used to evaluate whether a proposed action is significant. A "significant regulatory action" means any regulatory action that is likely to result in a rule that may:

- 1. Have an annual effect on the economy of \$100 million or more, or adversely effect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities*

The economic impact analysis shows that across vessel and homeport categories, incomes will remain at or near current levels. While the changes to trip limits, as a result of the Federal Court decision, may redistribute monkfish revenues among fleet sectors, negatively affected vessels, particularly offshore trawl vessels, may recoup most, if not all lost income by redirecting their effort onto other available fisheries, particularly multispecies. Therefore, no adverse effects are expected from this proposed action.

- 2. Create a serious inconsistency or otherwise interfere with an action taken or planned by another*

agency.

The emergency action does not appear to create a serious inconsistency with any action taken or planned by another agency, since it is designed to retain catches at the recent levels.

3. *Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof.*

The emergency action does not affect any entitlement, grant or other programs.

4. *Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.*

The disapproval of Framework 1 and the emergency action does not appear to raise novel legal or policy issues since the purpose and effect of the action is to incorporate the newest science into the FMP and extend for one year the fisheries management program for monkfish in place during Years 2 and 3 of the FMP, thereby relieving burdensome restrictions on the industry. The only adjustment to the regulations in place during Years 2 and 3 is a recalculation of monkfish trip limits to achieve fishing year 2000 landing levels following a Federal Court decision that vacated differential gear-based trip limits in November 2001. Although promulgating this rule as an emergency action under section 305(c) of the Magnuson-Stevens Act is somewhat anomalous, it is consistent with NFMS Guidelines on Emergency Actions.

Initial Regulatory Flexibility Analysis (IRFA)

The Regulatory Flexibility Act (RFA) requires that Federal regulators examine the impacts of proposed rules on small businesses, small organizations, and small governmental jurisdictions. A complete description of the need for, and objectives of, this proposed action taken under legal authority of the Magnuson-Stevens Fishery Conservation and Management Act and regulations at 50 CFR 648 can be found in Section 1.0 of this EA. This action does not contain any collection of information requirements, implement new reporting or recordkeeping measures, or create other compliance requirements. This action will not duplicate, overlap, or conflict with any other Federal rules.

Description and number of small entities to which the rule applies

The category of entities likely to be affected by this action is limited access monkfish permit holders, which are primarily small entities. The preferred alternative affects only a subset of those entities, primarily trawl and gillnet vessels fishing in the SFMA. As of March 13, 2002, there were 704 vessels holding active limited access monkfish permits, and an additional 34 vessels holding limited access monkfish permits in a Confirmation of Permit History. Approximately 160 of these vessels declared their intention to fish in the NFMA for at least 30 days during the 2001 fishing year (May 1, 2001, to April 30, 2002), thereby fishing under the less restrictive management measures of the NFMA.

Economic impacts on small entities resulting from the proposed action

The economic analysis in Section 5.2, particularly in Table 10, discusses the effect of the proposed action on incomes of vessels in each of several subdivisions. For comparison purposes, Table 7 shows the income effect of the no-action alternative, while Table 8, Table 9, and Table 11 show the effect of other alternatives considered on net income. Please note that the analysis did not include the effect of reduced DAS allocations, which would increase the burden on most vessels, especially those without alternative fisheries, particularly those in permit Categories A and B.

The preferred alternative would result in loss of income from fishing year 2000 levels for several vessel types. However, these losses are lower than the losses that would result from implementation of either the non-preferred or no action alternative. Under the preferred alternative, approximately 10 percent of vessels less than 50 feet in length would experience a 3.4-percent or greater reduction in income as a result of the proposed measures. However, 10 percent of these vessels would experience a 12.4-percent or greater reduction in income under the non-preferred alternative, and 54.6-percent or greater loss in income under the no action alternative. The income of vessels in other size categories would either not be affected by implementation of the preferred alternative, or would be reduced by less than 1 percent. Conversely, 10 percent of vessels greater than or equal to 50 feet in length would experience some income loss under the non-preferred and no action alternatives. For example, vessels between 50 and 70 feet in length would experience an income loss of 1.5 percent or greater under the non-preferred alternative, and a 10.2-percent or greater loss in income under the no action alternative.

Vessels holding limited access category A and B permits would be the vessels most severely impacted by the no action alternative. Under this alternative, 10 percent of these vessels would lose 100 percent of their net income from fishing. However, 10 percent of vessels in these categories would likely not be affected at all, because their landings during the 2000 fishing year were at or below the incidental catch levels allowed under the no action alternative. Impacts to these vessels would be substantially less under either the preferred or non-preferred alternatives. Under the preferred alternative, 10 percent of these vessels would experience no income loss, but 50 percent would experience an income loss of 3.1 percent or greater. Under the non-preferred alternative, 10 percent of these vessels would experience no income loss, but 50 percent would experience an income loss of 9.9 percent or greater.

Under any of the 3 alternatives, vessels that hold limited access category C permits would be the least impacted of all vessels holding limited access monkfish permits. Under the preferred alternative, category C vessels have a higher possession limit than category D vessels. Ten percent of category C vessels would experience a 0.8-percent or greater

reduction in income, and 10 percent of category D vessels would experience a 2.9-percent or greater reduction in income. Under the non-preferred alternative, category C vessels also have a higher trip limit than category D vessels. Category C vessels would experience a 3.7-percent or greater loss in income while category D vessels would experience a 5.9-percent or greater loss in income. Finally, the no action alternative would result in 10 percent of category C vessels having a 25.8-percent loss in income while category D vessels would experience a 43.3-percent loss in income.

Geographically, vessels homeported in New Jersey and Delaware (combined) would be the vessels most affected under all three alternatives. Under the no action alternative, 10 percent of these vessels would experience a 72-percent or greater loss in income, while 10 percent of these vessels would experience a 12.5-percent or greater loss in income under the non-preferred alternative. Under the preferred alternative, 10 percent of the vessels homeported in New Jersey and Delaware would experience only a 2.1-percent or greater loss in income.

Appendix II. Trip Limit Analysis Conducted for Framework 1

A Study of Monkfish Trip Limits

Stanley Wang, Kurt Wilhelm and John Witzig

Background

Recent Federal Court decisions ruled that differential trip limits for vessels landing monkfish based on gear categories were arbitrary and inequitable and thus illegal unless sufficient justification could be provided. The court's decision stipulated that differential trip limits could be based on permit categories but should be the same for the trawl and non-trawl fishing sectors. Thus trip limits for the non-trawl gear sector should be identical to those for the trawl gear sector within permit categories. Management options being considered include increasing the trip limits for non-trawl vessels in the A&C monkfish permit categories from 300 lbs to 1,500 lbs per day-at-sea (DAS) and for the B&D permit categories from 300 to 1,000 lbs live weight per DAS.

In response to the Court's direction, the Monkfish Monitoring Committee (MMC) requested analyses of potential trip limits which would adhere to the court's ruling and at the same time not result in the annual quota being exceeded. The MMC requested that the following scenarios be examined:

Scenario 1: Estimate a trip limit that would **maintain** monkfish landings from the Northern Fishery Management Area (NFMA) by A&C and B&D permit categories for directed monkfish fishing trips at the same level as in FY2000.

Scenario 2: Estimate a trip limit that would **achieve** the FY2002 NMFA monkfish landing quota by A&C and B&D permit categories for directed monkfish fishing trips to the NFMA.

Scenario 3: Estimate a trip limit and DAS allocation that would ***maintain*** monkfish landings from the Southern Fishery Management Area (SFMA) by A&C and B&D permit categories at the same level as in FY2000.

Scenario 4: Estimate a trip limit and DAS allocation that would ***achieve*** the FY2002 SFMA monkfish landing quota by A&C and B&D permit categories for vessels fishing in the SFMA.

All analyses were based on fishing year 2000 landings (FY2000: May 1, 2000 - April 30, 2001) supplemented by information from FY1999 (May 1, 1999 - April 30, 2000) as indicated in the text. Management decisions for fishing year 2002 (May 1, 2002 - April 30, 2003), based on the results presented here, implicitly assume that monkfish availability in FY 2002 will be similar to that in FY2000.

Analysis

Scenario 1: Estimate a trip limit that would ***maintain*** monkfish landings from the Northern Fishery Management Area (NFMA) by A&C and B&D permit categories for directed monkfish fishing trips at the same level as in FY2000.

A directed monkfish trip is defined as any non-dredge trip on which monkfish landings accounted for 50% or more of the total landed weight for the trip. The MMC requested an analysis of two alternatives regarding monkfish landings on directed trips.

Scenario 1a: Estimate a trip limit for directed trips to the NFMA by A&C and B&D permitted vessels that *maintains* the landing by trip category and the overall NFMA monkfish landings at the same level as in FY2000.

Scenario 1b: Estimate a trip limit for directed trips to the NFMA by A&C and B&D permitted vessels that *increases* landings by directed trips and *decreases* monkfish landings by non-directed trips to 25 percent of total landings on a trip basis (i.e., reduce the trip limit for non-directed trips to 25% of the total landings). This scenario *maintains* the overall NFMA monkfish landing at the same level as in FY2000.

Scenario 1a:

Data sources and analytical procedures

Vessel trip reports (VTR) provide basic trip-by-trip information used in these analysis. Generally hail weight as reported on the VTRs is less than less than total landed weight reported by federally permitted seafood dealers. Trip limits, calculated using hail weight from the VTRs are adjusted based on the ratio of hail weight from the VTRs to weighout weights from seafood dealer reports. Analysis for this scenario focuses on directed trawl and non-trawl multispecies trips and excludes dredge trips.

Based on the VTRs which identified NFMA as fishing area, the directed trips by vessels in the A&C permit categories landed 4,439 thousand pounds of monkfish and directed trips by vessels in the B&D permit categories landed 3,820 thousand pounds in FY2000 (Table 1). The landings for FY2000 establish the landings goals for Scenario 1a analysis. Maintaining the VTR landings based on hail weight is equivalent to maintaining the weighout landings after adjustment.

In this analysis we constrained fishing trips exceeded the trip limit to the trip limit. That is, any trip which reported landings greater than the trip limit was reduced to the trip limit, the maximum proposed landings. A trip limit forces only those trips that have landings per DAS higher than the trip limit to reduce trip landings to the trip limit, while leaving the landings on other trips unchanged. This constraint is reasonable because a trip limit on a landing-per-DAS basis is designed to limit trips from landing beyond the limit but leave trips landing below the limit unchanged.

Application of this constraint while reasonable is conceptually inconsistent with the use of trip limits to maintain landings at the same level as was achieved when there were no trip limits. Since a trip limit is designed to constrain or reduce landings, it can maintain the FY2000 landing of the sector under no trip limits only if the trip limit is not effective. This implies that a trip limit is equivalent to no trip limits.

Scenario 1b:

Data sources and analytical procedures

The data source and analytical procedures for this Scenario 1b analysis is identical those for the Scenario 1a. The landings goals for directed fishing trips increases under this scenario while the goal for the non-directed fishing trips declines. Based on the FY2000 VTR data, reduction of the trip limit for non-directed trips to 25 percent of the total trip landings, reduces total landings for non-directed trips to 2,956 thousand pounds in the NFMA. The reduction in non-directed trips *proportionally* increases the goals for the A&C and B&D permit categories by 1,874 thousand lbs and 1,082 thousand lbs, respectively (Table 1).

The same constraint regarding trip limits and landings for Scenario 1a is also made for this scenario, i.e., *trips landing higher than the trip limit are constrained to land at the limit*. Like Scenario 1a, this scenario also conceptually inconsistent in that it uses a trip limit *for increasing landings rather than constraining or reducing the landing*.

Scenario 2: Estimate a trip limit which would **achieve** the FY2002 NMFA monkfish landing quota by A&C and B&D permit categories for directed monkfish fishing trips to the NFMA.

This analysis focuses on two alternatives:

Scenario 2a: Estimate a trip limit for directed trips to the NFMA by A&C and B&D permitted vessels which *achieves* the landing by trip category and the overall NFMA monkfish landings at the quota for FY2000.

Scenario 2b: Estimate a trip limit for directed trips to the NFMA by A&C and B&D permitted vessels which *achieves* landings by directed trips and *decreases* monkfish landings by non-directed trips to 25 percent of total landings on a trip basis (i.e., reduce the trip limit for non-directed trips to 25% of the total landings). This scenario *achieves* the overall NFMA monkfish landing at the quota for FY2000.

Analysis of Scenario 2

Compared to the Scenario 1a and 1b, Scenarios 2a and 2b have lower landing goals to reflect a need to reduce the FY2000 landing to achieve the quota. These landing goals are derived from the landing goals of Scenarios 1a and 1b. In FY2000 monkfish landings from the NMFA exceeded its quota by 106%, therefore landings must be reduced by 51.45% to avoid exceeding the established quota (or alternatively to achieve the established quota) (Table 2).

As in previous analyses, Scenario 2 was constrained by limiting landings to the trip limits, i.e., *trips landing higher than the trip limit were reduced to the limit.*

Scenario 2a:

Data source and analytical procedures

Directed monkfish trips in the NFMA from FY2000 were selected based on criteria established for Scenario 1 for this analysis. These trips are used to examine various levels of trip limits and to identify a trip limit which equalizes the expected landings at each trip limit and the corresponding landing goal. For each of the directed trip sectors (A&C and B&D permit categories), an iterative process was used to identify a landings-per-DAS limit which would achieve the landing goal for the sector. The analysis starts evaluating landing-per-DAS limit by iteratively reducing the limit in hundred pound increments and recalculating total landing of the directed trip sector until the recalculated total landing is equal to the landing goal of the sector.

For each directed trip sector (e.g., A&C directed trips), the recalculated total landings for each landing-per-DAS limit were produced according to the procedures outlined below.

1. Directed trips that landed monkfish from the NFMA greater than the landing-per-DAS limit were adjusted to land at the limit.
2. Directed trips that landed monkfish from the NFMA less than the landing-per-DAS limit were not adjusted and landings for these trips was set at the amount reported.
3. Recalculated landings are the sum of the reset landings of the directed trips which exceed the limit plus the original landings of the directed trips which did not exceed the landing-per-DAS limit.

Findings

The analysis indicates that to achieve the FY2000 NMFA monkfish quota, the monkfish landings-per-DAS limit for the directed trips would have to be set at 282 lbs. tail weight or 936 lbs. live weight for the A&C directed trips and 272 lbs. tail weight or 903 lbs. live weight for the B&D directed trips. (Table 3).

Scenario 2b:

Data source and analytical procedures

The data source and analytical procedures for analyzing Scenario 2b is identical those for Scenario 2a above except that the landing goal for non-directed trips was established under a trip limit which reduced landings of monkfish to 25% of total trip landings. The remainder of the NMFA quota was then proportionally allocated to the A&C and B&D permit categories.

Findings

The analysis indicates that to achieve the FY2002 NMFA monkfish quota, the monkfish landing-per-DAS limit for the directed trips would have to be set at 446 lbs. tail weight or 1,481 lbs. live weight for the A&C directed trips and 387 lbs. tail weight or 1,285 lbs. live weight for the B&D directed trips (Table 3).

Scenario 3: Estimate a trip limit and DAS allocation which would *maintain* monkfish landings from the Southern Fishery Management Area (SFMA) by A&C and B&D permit categories at the same level as in FY2000. The MMC requested that trip limits for the SFMA be estimated for combined A&C permits and B&D permits. In addition, apportioning the FY2000 SFMA landings by permit category to serve as the FY2002 landing goals for each permit category, landing patterns for FY2000 and FY1999 should be used. This results in two sets of landing goals. Further, in some cases, trip limits are pre-specified for determining the level of the SFMA monkfish DAS allocation. For example, the trip limits are pre-specified at 1,500 lbs./DAS for A and C permit categories and 1,000 lbs./DAS for B and D categories in two cases. Therefore, the following

alternatives under Scenario 3 were established.

Scenario 3a: Estimate trip limits by A&C and B&D combined permit categories for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and SFMA monkfish landings are *maintained* at the FY2000 level of 17,731 thousand pounds.

Scenario 3b: Estimate trip limits by A&C and B&D combined permit categories for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and SFMA monkfish landings are *maintained* at the FY2000 level of 17,731 thousand pounds.

Scenario 3c: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 fishing landing pattern* and SFMA monkfish landings are *maintained* at the FY2000 level of 17,731 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at 1,500 lbs. live weight for A&C permit category and 1,000 lbs. live weight for B&D category.*

Scenario 3d: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 fishing landing pattern* and the SFMA monkfish landing *maintains* at the FY2000 level of 17,731 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at 1,500 lbs live weight for A&C permit category and 1,000 lbs. live weight for B& D category.*

Scenario 3e: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and SFMA monkfish landings are *maintained* at the FY2000 level of 17,731 thousand pounds. *The pre-specified trip limit per monkfish DAS is set mid-way between two limits under Scenarios 3a and 3c.*

$$\begin{aligned} \text{VTR monkfish landing of unmatched DAS trips} &= (\text{VTR landings of matched D. Strips}) \cdot \frac{0.1245}{0.2076} \cdot (0.54) \\ &= (\text{VTR landings of matched D. Strips}) \cdot 0.17 \end{aligned}$$

Scenario 3f: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined based on the FY1999 landing pattern and SFMA monkfish landings are maintained at the FY2000 level of 17,731 thousand pounds. The pre-specified trip limit per monkfish DAS is set mid-way between two limits under Scenarios 3b and 3d.

Analysis

The first task is to identify landing goals for each scenario. Since the DAS trips of the permit categories are focus of the analysis, the SFMA monkfish landing by trip category would be the basic data for the task. Due to incomplete trip matching between DAS and VTR databases and between DAS and weighout databases, the SFMA landings by trip category was produced with procedures below. These procedures were used for each of FY2000 and FY1999 separately.

1. Identify the VTR monkfish landings of trawl and non-trawl trips for A&C and B&D categories¹ by matching the reports from the DAS call-in system for monkfish permitted vessels with the VTR trawl and gillnet trips for FY2000. Note that all matched trips were to the SFMA in FY2000.
- 2 Identify the VTR monkfish landing of unmatched trawl and non-trawl trips for A&C and B&D permit categories. This accounts for partial matching and also partial reporting of VTR trips. On average (FY2000 and FY1999), about 76% of the DAS trips matches the VTR trips and about 54% of weighout landing is accounted for in the VTR landing. The VTR landings of the matched trips is used to project the VTR landing of the unmatched DAS trips.

¹ Non-trawl trips include primarily gillnet trips but exclude dredge trips in the report.

3. Identify the VTR landings of monkfish by fishing trips using dredge gear and trips by vessels with E permits: Total VTR monkfish landing of the SFMA minus the landings in (1) and (2) above.
4. Landings from (1) through (3) comprise the VTR monkfish landings from the SFMA by trip category and are used to allocate the SFMA weighout landings by trip category.

The results of Steps (1) through (4) are presented in Table 4.

Based on these results (Table 4), the landing goals for these scenarios are established as follows:

Since the estimation of trip limit under Scenarios 3a and 3b uses individual VTR data of the matched DAS trips, the corresponding VTR landing of these matched trips are used as the landing goals for these two scenarios (Table 5).

Under alternative Scenarios 3c, 3d, 3e, and 3f which are to estimate available DAS for fishing and allocation for all DAS trips, both matched and unmatched DAS trips of A&C and B&D categories should be included in the analysis. The landing goals therefore include the weighout landings of both matched and unmatched DAS trips (Table 5).

Scenario 3a: Estimate trip limits by A&C and B&D combined permit categories for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and SFMA monkfish landings are *maintained* at the FY2000 level of 17,731 thousand pounds.

Source of Data and Procedures

Matched DAS trips / VTR trips are used as the basis for identifying separate landings-per-DAS limits for trawl and non-trawl gears for the A&C and B&D permit categories. Matched trips represent a sample of all trips, thus the relationships of landings among permit categories and total reported landings provides information which can be used to partition total landings to the various permit categories. If the VTR landings are maintained at the same level as in FY2000, then weighout landing would also be maintain at the

FY2000 level because VTR landings reflect total weighout landings, albeit off by a scaling factor.

In FY2000, separate landings/DAS limits were established for the non-trawl (300 lbs/DAS) and trawl (1,500 lbs/DAS) gear sectors. Thus, to evaluate landings-per-DAS limit greater than 300lbs/DAS for the non-trawl sector, FY1999 VTRs were used to estimate potential landings under an unconstrained condition (i.e., no landing-per-DAS limit). A ratio estimator was used to account for changes in fishing and economic conditions, product availability, etc. between FY1999 and FY2000. The ratio was used to adjust FY1999 landings under an unconstrained landings limit and taking into account changes which may have occurred between FY1999 and FY2000. Landings for the trawl gear sector were based on the FY2000 VTRs because the likely landings/DAS were expected to be below the limits already in place during FY2000 (i.e., 1,000 lbs/DAS for the B and D permit category and 1,500 lbs/DAS for the A and C permit category).

Procedures for simulating an unconstrained condition for the matched non-trawl trips for FY2000 are outlined below.

1. Determine the total landings of monkfish of the matched non-trawl trips in FY2000 by permit category. This is the non-trawl landings under the 300 lbs/DAS landing limit.
2. Simulate a 300 lb-per-/DAS limit for FY1999 for the matched non-trawl trips by reducing the landings for trips which reported landings greater than the 300 lbs/DAS landings limit to 300 lbs. Trips which did not exceed the 300 lb-per-DAS limit were not adjusted. Total landings for the non-trawl trips for FY1999 under a 300 lb-per-DAS limit constraint is the sum of the reduced trips and the unadjusted trips.
3. Calculate the ratio [R] of landings in FY2000 to FY1999 under the 300 lbs/DAS constraint to account for changes in economic, fishing and other extrinsic conditions between the two years.
4. Simulate an FY2000 fishery for the matched non-trawl trips under an unconstrained landings/DAS limit by multiplying landings and trip length (in DAS) for each of the matched non-trawl trips from FY1999 by R.

The procedures outlined above are followed for each of A&C and B&D combined permit categories separately.

An iterative process was used to estimate a single landing-per-DAS limit for each permit category (i.e., A&C) which would achieve the same total landings as in FY2000. The analysis starts evaluating landing-per-DAS limit by iteratively reducing individual vessel landings in hundred pound increments and recalculating landings until the landings goal for each permit category is achieved (last column in Table 4).

The recalculated landings for each landing-per-DAS limit were produced according to the procedures outlined below. These procedures were applied separately to each permit category. The universe of fishing trips used in these analysis was limited to the matched trawl trips of the SFMA in FY2000 and the simulated matched non-trawl trips of the SFMA for FY2000.

1. Trips that landed monkfish greater than a landing-per-DAS limit were adjusted to land at the landing-per-DAS limit.
2. Trips that landed monkfish less than the reduced landings/DAS limit were not adjusted.
3. Recalculated landings are the sum of the reset landings of all trips which exceed the plus the original landings of all trips which did not exceed the landing-per-/DAS limit.

Findings

Results of these analyses indicate that a landing-per-DAS limit of 544 lbs. tail weight (1,807 lbs. live weight) for A&C category and 457 lbs. in tail weight (1,518 lbs. live weight) for B&D category be established in order to maintain landings by permit category at the same level as in FY2000 with a single landing-per-DAS limit for each permit category (Table 6). There would be no impact on the total landing because the limits are set to maintain landings at the same level as in FY2000.

Scenario 3b: Estimate trip limits by A&C and B&D combined permit categories for vessels fishing in SFMA while the landing goal by permit category is determined based on the FY1999 landing pattern and SFMA monkfish landings are

maintained at the FY2000 level of 17,731 thousand pounds.

Data resource and analytical procedures

The data source and analytical procedures used in this scenario is identical to those in Scenario 3a above except the this scenario uses a new set of landing goals as shown in Table 5.

Findings

Results of these analyses indicate that a landing-per-DAS limit of 243 lbs. tail weight (808 lbs. live weight) for A&C category and 262 lbs. tail weight (870 lbs. live weight) for B&D permit category be established in order to maintain landings by permit category at the same level as in FY2000 with a single landing-per-DAS limit for each permit category (Table 6). There would be no impact on the total landing because the limits are set to maintain landings at the same level as in FY2000.

Scenario 3c: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 fishing landing pattern* and SFMA monkfish landings are *maintained* at the FY2000 level of 17,731 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at 1,500 lbs. live weight for A&C permit category and 1,000 lbs. live weight for B&D category.*

Data source and analytical procedures

For each of A&C and B&D categories, the analysis of this scenario uses the same matched trips used in Scenarios 3a and follows the same procedures as outlined in Scenario 3a to generate expected landings under the pre-specified trip limit of the category (e.g., 1,500 lbs. / DAS for the A&C permit category). The expected landings for a permit category is then divided by total DAS of the category to yield the average landing per DAS of the category.

The average landing per DAS of the category is used to divide the landing goal of the category to produce *available DAS for fishing* for the category. The available DAS for fishing is then divided by number of permitted vessels in the category to obtain available fishing DAS per vessel which is further

divided by the FY2000 usage rate of the category (0.56 for A&C and 0.43 for B&D) to generate the average DAS allocation per vessel of the category.

The details of the analytical steps are also shown in Table 7 and the findings are also presented in the table.

Findings

Using the FY2000 landing pattern to define the landing goals and under the pre-specified trip limit of 1,500 lbs. per DAS for the A&C permit category and 1,000 lbs. per DAS for B&D permit category. Based on the number of permitted vessels and the average catch per DAS. Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 8 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels

$$\text{Available DAS for fishing} = \frac{\text{landing goal.}}{\text{average landing per DAS}}$$

$$\text{Average DAS for fishing per vessel} = \frac{\text{Available DAS for fishing}}{\text{\# of permitted vessels in the category}}$$

$$\text{Available DAS allocation per vessel} = \frac{\text{Average DAS for fishing per vessel}}{\text{\% of DAS usage in FY2000}}$$

DAS and 9 DAS for the A&C and B&D permit categories,

fisher-
d the
average
DAS
allocation
per
vessel
would
be 14

respectively (Table 7)².

Scenario 3d: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 fishing landing pattern* and the SFMA monkfish landing *maintains* at the FY2000 level of 17,731 thousand pounds. The pre-specified trip limit per monkfish DAS is set at 1,500 lbs. live weight for A&C permit category and 1,000 lbs. live weight for B&D permit category.

Data source and analytical procedures

The analytical procedures for this scenario is the same as those in Scenario 3c above; landing goals are based on FY1999 landing pattern.

Findings

Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 5 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels fished the average DAS allocation per vessel would be 8 DAS and 9 DAS for the A&C and B&D permit categories, respectively (Table 7).

Scenario 3e: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and SFMA monkfish landings are maintained at the FY2000 level of 17,731 thousand pounds. The pre-specified trip limit per monkfish DAS is set mid-way between two limits under Scenarios 3a and 3c.

Data source and analytical procedures

The data and analytical procedures are identical to those in Scenario 3c except the pre-specific trip limit in this

² Analyses for Scenarios 3c-3f and 4c-4f assume that the DAS usage distribution would be maintained. That is, vessels which historically used 10% of their allocation (e.g., 40 DAS in 2000) would continue to use 10% of any reduced allocation, etc. This does not seem reasonable. Vessels which historically used more DAS than are allocated are more likely to use their full allocation. This would increase the probability of exceeding the landings goals under any of the scenarios.

scenario is between at the mid-way between 3a and 3c. The mid-way trip limit is determined to be 1,000 lbs. per DAS for the A&C permit category and 700 lbs. per DAS for the B&D permit category.

Findings

Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 9 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels fished the average DAS allocation per vessel would be 17 DAS and 9 DAS for the A&C and B&D permit categories, respectively (Table 8).

Scenario 3f: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and SFMA monkfish landings are maintained at the FY2000 level of 17,731 thousand pounds. *The pre-specified trip limit per monkfish DAS is set mid-way between two limits under Scenarios 3b and 3d.*

Data source and analytical procedures

The data and analytical procedures are identical to those in Scenario 3c except this scenario uses a different set of landing goals and has a pre-specific trip limit at the mid-way between 3b and 3d. The mid-way trip limit is determined to be 900 lbs. per DAS for the A&C permit category and 600 lbs. per DAS for the B&D permit category.

Findings

Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 6 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels fished the average DAS allocation per vessel would be 10 DAS and 9 DAS for the A&C and B&D permit categories, respectively (Table 8).

Scenario 4: Estimate a trip limit and DAS allocation which would **achieve** the FY2002 SFMA monkfish landing quota by A&C and B&D permit categories for vessels fishing in the SFMA.

Since trip limits are estimated for each permit category separately, the SFMA quota must first be apportioned to yield the landing goal by permit category. The apportioned quotas are based on landing patterns of two fishing years (FY2000 and FY1999), resulting in two sets of landing goals. Further, in some cases, trip limits are pre-specified to determine the level of the monkfish DAS allocation in SFMA. For example, in two cases, the trip limits are pre-specified at 1,500 lbs./DAS for A&C permit categories and 1,000 lbs./DAS for B&D permit categories. Therefore, several alternative scenarios were examined.

Scenario 4a: Estimate trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds.

Scenario 4b: Estimate trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds.

Scenario 4c: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at 1,500 pounds for A&C permit categories and 1,000 pounds for B&D permit categories.*

Scenario 4d: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at 1,500 pounds for A&C permit categories and 1,000 pounds for B&D permit categories.*

Scenario 4e: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at the mid-way between two limits under Scenarios 4a and 4c.*

Scenario 4f: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at the mid-way between two limits under Scenarios 4b and 4d.*

Analysis of Scenario 4

In order to set the landing goals under Scenario 4 to achieve the quota, the FY2000 SFMA landings must be reduce to the quota. Criteria for allocating the reduction are:

(1) landings of dredge trips and E trips remain the same, and
(2) the other trip categories (A&C matched trips, B&D matched trip, A&C unmatched trips and B&D unmatched trips) take their shares of the necessary reduction in proportion to their FY 2000 landings.

The results of reduction to the quota are presented in Table 9

With the data in Table 9, the landing goals for the scenarios can be established as follows: Since the estimation of trip limit under Scenarios 4a and 4b uses individual VTR data of the matched DAS trips, the corresponding VTR landing of these matched trips should be the landing goals of these two scenarios, as shown in Table 10.

Under alternative Scenarios 4c, 4d, 4e, and 4f which are to estimate available DAS for fishing and allocation for all DAS trips (matched and unmatched trips) of A&C and B&D permit categories, the landing goals of these categories should the weighout landings of both matched and unmatched trips and are shown in Table 10.

Scenario 4a: Estimate trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and the SFMA monkfish landing would *achieve* at the SFMA quota of 13,281 thousand pounds.

Data source and analytical procedures

Data and analytical procedures for scenario 4a are similar to those used for Scenario 3a except that the landing goal is adjusted to achieve the quota.

Findings

Results indicate that a landing-per-DAS limit of 309 lbs. tail weight (1,026 lbs. live weight) for A&C permit category and 267 lbs. tail weight (888 lbs. live weight) for B&D permit category be established in order to achieve the SFMA quota (Table 11).

Scenario 4b: Estimate trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and the SFMA monkfish landing would *achieve* at the SFMA quota of 13,281 thousand pounds.

Data source and analytical procedures

Data and analytical procedures for Scenario 4b are similar to those used for Scenario 3b except that the landing goal is a different set relative to quota.

Finding

In order to achieve the SFMA quota, a landing-per-DAS limit of 102 lbs. tail weight (338 lbs. live weight) for A&C permit category and 112 lbs. tail weight (370 lbs. live weight) for B&D permit category should be established (Table 11).

Scenario 4c: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281

thousand pounds. *The pre-specified trip limit per monkfish DAS is set at 1,500 pounds for A&C permit categories and 1,000 pounds for B&D permit categories.*

Data source and analytical procedures

Data and analytical procedures are identical to those used in Scenario 3c except that this scenario uses a lower set of landing goals.

Findings

Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 5 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels fished the average DAS allocation per vessel would be 10 DAS and 9 DAS for the A&C and B&D categories, respectively (Table 12).

Scenario 4d: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and the SFMA monkfish landing would *achieve the SFMA quota of 13,281 thousand pounds. The pre-specified trip limit per monkfish DAS is set at 1,500 pounds for A and C permit categories and 1,000 pounds for B and D categories.*

Data source and analytical procedures

The data and analytical procedures are identical to those used in Scenario 3d except that this scenario uses a lower set of landing goals.

Findings

Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 2 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels fished the average DAS allocation per vessel would be 4 DAS and 9 DAS for the A&C and

B&D categories, respectively (Table 12).

Scenario 4e: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY2000 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at the mid-way between two limits under Scenarios 4a and 4c.*

Data source and analytical procedures

Data and analytical procedures are identical to those used in Scenario 3e except that this scenario uses a different set of landing goals at lower levels. The mid-way trip limit is 900 lbs (tail weight) for A&C permit category and 600 lbs (tail weight) for the B&D permit category.

Findings

Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 7 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels fished the average DAS allocation per vessel would be 12 DAS and 9 DAS for the A&C and B&D categories, respectively (Table 13).

Scenario 4f: Determine monkfish DAS allocation with pre-specified trip limits by permit category for vessels fishing in SFMA while the landing goal by permit category is determined *based on the FY1999 landing pattern* and the SFMA monkfish landing would *achieve* the SFMA quota of 13,281 thousand pounds. *The pre-specified trip limit per monkfish DAS is set at the mid-way between two limits under Scenarios 4b and 4d.*

Data source and analytical procedures

The data and analytical procedures are identical to those used in Scenario 3c except that this scenario uses a different set of landing goals at lower levels. The mid-way trip limit is 800 lbs. (tail weight) for A&C permit category and 600 lbs (tail weight) for the B&D permit category.

Findings

Based on the average catch per DAS, the number of vessels in each permit category and the preset trip limit, vessels in the A&C permit category would use an average of 3 DAS and vessels in the B&D permit category would use an average of 4 DAS. However, since not all vessels fished the average DAS allocation per vessel would be 5 DAS and 9 DAS for the A&C and B&D categories, respectively (Table 13).

Summary

The findings of all scenario analyses are summarized in Tables 14 and 15. Table 14 contains the findings of the scenarios for the NFMA while Table 15 contains the findings of the scenarios for the SFMA. While the findings could provide information for policy guidance, they are limited in their applicability to the fisheries in future years. In future, not only the fishing behavior can easily alter but also the resource availability is likely to change in future.

This study is primarily based on the FY2000 VTR data with some consideration of fishing landing patterns in FY1999. It may not fully account for potential changes in fishing behavior, resulting in changes in landing-per-DAS limits. For example, in response to changes in landing-per-DAS limit, fishing pattern of the FY2000 fishery in number of trips, trip length and trip landing may change in a manner different from the changes assumed in this study, particularly the identified trip limits represent a drastic change from the actual limits in FY2000.

An underlying assumption of several of the alternative scenarios (3c-3f and 4c-4f) is that the historic distribution of DAS usage rates would continue under any DAS allocation. For example, vessels which historically used 10% of their DAS allocation would continue to use 10% of the DAS allocation, no matter what the allocation was. This does not seem likely. An alternative assumption is that vessels which historically used more DAS than any new allocation would more likely fish at or near the maximum number of DAS available. This could lead to landings substantially