

## **7.0 RELATIONSHIP TO OTHER APPLICABLE LAW**

### **7.1 *Environmental Impact Statement – National Environmental Policy Act***

#### **7.1.1 Table of Contents**

The Table of Contents for the FEIS is integrated into the FMP on page ii.

#### **7.1.2 Summary**

##### **7.1.2.1 Background**

The background of the FMP is presented in Section 2.1 of this document.

##### **7.1.2.2 Major conclusions**

###### **7.1.2.2.1 Rationale for the Adoption of the Preferred Alternative**

The preferred alternative addresses an overfished condition of the monkfish resource in the Northwest Atlantic. Responding to the requirements of Section 304(e)(1) of the Magnuson-Stevens Act, the Secretary of Commerce notified the Councils on September 30, 1997 that the monkfish resource was in an overfished condition due to low biomass. Section 304(e)(3) of the Act therefore requires the Councils to prepare a fishery management plan for monkfish that will end overfishing and rebuild the stock. This FMP proposes to reduce mortality in a series of steps, stop overfishing in year 4, and rebuild stock biomass to target levels by year 10, fully complying with Section 304(e) of the Act.

The Councils considered a wide range of alternatives and various management options within those alternatives. Sections 7.1.4.2, 7.1.4.3, and 7.1.4.4 contain a discussion of the range of alternatives considered and the rationale for rejecting those not adopted. The No Action alternative was rejected because it would not stop overfishing and achieve the goals of the FMP. The Councils considered other mortality reduction schedules. The initial proposal taken to public hearings in February 1997 included a seven-year schedule to reduce mortality below the overfishing threshold and a schedule to rebuild stock biomass in eight-years from plan implementation. This schedule was ultimately rejected because it was unlikely that the stock would rebuild one year after reducing mortality below the overfishing threshold and seven years was not sufficiently risk-adverse. The Councils rejected mortality reduction schedules less than four years because the transitional and opportunity costs were too high, considering the uncertainty in the biological reference points and management targets. Qualitatively, these costs outweigh the calculated economic benefit of a faster mortality reduction schedule, given that the economic results are contingent on highly uncertain yields at the biomass target. The preferred alternative is therefore a compromise between these competing concerns. The four-year mortality reduction schedule, coupled with annual monitoring and a comprehensive third-year review will enable the Councils and NMFS to collect information that will be necessary to fine tune this management plan.

Alternative 1 was rejected because quotas would not work well for many mixed-species fisheries that include monkfish and the proposed bycatch trip limits were anticipated to cause unacceptably high discarding. No positive comments for alternative 1 were given at the February 1997 public hearings. Alternative 2 was an attempt to increase the bycatch trip limits and accommodate incidental catches of monkfish in fisheries that targeted a mixed catch where monkfish was a component. The Council rejected Alternative 2 prior to the February 1997 public hearings because it relied too heavily on trip limits to manage the fishery and had unacceptably low directed fishery

quotas. Alternative 4 is a modification of day-at-sea management proposed by alternative 3, but with lower bycatch allowances to boost the allocation of monkfish to the limited access fishery. The added allocation would enable the Councils to allocate some days to all vessels that qualify for monkfish limited access while meeting the mortality goals of the plan. Some favorable comments for alternative 4 were given at public hearing, but the overwhelming majority of people supported alternative 3. The Council ultimately rejected alternative 4 because the day-at-sea allocated to limited access vessels were too low and the bycatch trip limits would create unacceptable discarding.

One of the major sources of concern about alternative 3 was the automatic qualification of all multispecies vessels and the proposal to allow them to use any and all of their 88 annual multispecies days to target monkfish. Many believed that this proposal was too liberal and the Councils had underestimated the opportunity for vessels to increase monkfish fishing effort. There is a significant proportion of multispecies days that are allocated, but not used to target groundfish. If a significant amount of these days were re-deployed (via vessel activation or replacement) to target monkfish, alternative 3 would not have met the mortality reduction goals. Various permutations of qualification criteria, days-at-sea allocations, and trip limits were proposed as variants of the preferred alternative and taken to public hearing in February 1998. The new management alternative proposed to require all multispecies to qualify for monkfish limited access and it would only allow multispecies and scallop vessels to use 40 of their days-at-sea to target monkfish. The alternatives (labeled as non-preferred alternatives 3a and 3b) taken to public hearing in February 1998 and the preferred alternative that evolved from those proposals are evaluated and analyzed in the EIS.

The preferred alternative is expected to reduce fishing mortality in the Northern Fishery Management Area by 25 percent in year 1, by 33 percent in year 2 and by 50 percent in year 4 due to day-at-sea and trip limits alone. These results compare to a 55 percent mortality reduction goal in years 1 to 3 and a 68 percent mortality reduction goal in year 4. The Councils expect that the size limit (contributing 4 percent), area closures for other fisheries (e.g. the Gulf of Maine closures for cod), unanalyzable changes in behavior caused by day-at-sea management, and the synergistic effect of proposed management changes in other plans (5 percent for the preferred alternative in Amendment 7 to the Atlantic Sea Scallop FMP) will be sufficient to meet the mortality goals. The non-preferred alternatives 3a and 3b are expected to achieve similar mortality reductions, but discards are estimated to be substantially higher.

In the Southern Fishery Management Area, the proposed limited access program, the day-at-sea restrictions, and the trip limits are expected to reduce fishing mortality by 32 percent in year 1, by 49 percent in years 2 and 3, and by 65 percent in year 4. These results compare to mortality reduction goals of 59 percent in years 1 to 3 and 78 percent in year 4. As in the northern area, the Councils expect that the size limit (6 percent in year 1 and 27 percent in year 2), area closures in other fisheries (e.g. the Mid-Atlantic scallop closure), unanalyzable changes in behavior caused by days-at-sea management, and the synergistic effects of proposed management changes in other plans (7-8 percent reduction for the preferred alternative in Amendment 7 to the Atlantic Sea Scallop FMP) will be sufficient to meet the mortality goals. The non-preferred alternatives 3a and 3b are expected to achieve similar mortality reductions, but discards are estimated to be substantially higher.

The preferred alternative is therefore the best choice of all possible alternatives. It integrates monkfish management into pre-existing programs to manage fisheries, thus reducing administrative and enforcement costs. It comes closest to achieving the monkfish mortality objectives without increasing discards to unacceptable levels. Rebuilding is expected in 10 years, relying on framework adjustments to make mid-course corrections should the proposed measures fail to achieve the desired results. The transitional costs are kept to a minimum and the burdens appear to be distributed equitably. Communities and fishing sectors that share a larger burden of the costs during the rebuilding phase appear to also be the ones that will benefit from a rebuild stock biomass. Net benefits, measured by comparing expected revenue to No Action, are positive (\$20 million) over 20 years. Other alternatives could have slightly lower costs or higher economic yield, but have other undesirable effects.

The preferred alternative is based on a high degree of uncertainty about the biological reference points, the effectiveness of management to meet the mortality reduction goals, and the response of the stock to lower fishing mortality. If the combined effect of all measures and the realized mortality reductions are insufficient to meet the Magnuson-Stevens Act requirements and the FMP objectives, the flexibility and monitoring provided under the framework adjustment procedure will enable the Councils to respond to recent information as it becomes available.

The framework procedure also provides a contingent authority for the Regional Administrator to implement adjustments in the event the Councils fail to do so.

### **7.1.2.3 Areas of controversy**

Controversial issues are discussed in Section 2.2 of the FMP.

### **7.1.2.4 Issues to be resolved**

Issues to be resolved are discussed in Section 2.3 of the FMP.

## **7.1.3 Purpose and need**

The purpose and need for taking action are described in Section 2.5 of the FMP.

## **7.1.4 Alternatives Including the Proposed Action**

### **7.1.4.1 Description of the preferred alternative**

The proposed action is described in Section 3.0 of the FMP.

### **7.1.4.2 Alternatives to the preferred alternative**

#### **7.1.4.2.1 Summary**

The Councils took two non-preferred alternatives to public hearing in January 1998. The alternatives had the same basic management framework, but had preferred and non-preferred management measures. The major differences between these two non-preferred alternatives are explained in the Sections that follow. The specific management measures that the Councils proposed are summarized in the tables below.

Table 68. Summary of principal management measures by permit category.

Management measure	Multispecies vessels	Scallop vessels	Monkfish-only vessels
Qualification criteria - preferred	7,500 pounds tail-weight	See footnote 1	See footnote 1
Qualification criteria – non-preferred	7,500 pounds tail-weight for vessels less than 51 GRT 50,000 pounds tail-weight for all other vessels	7,500 pounds tail-weight for vessels less than 51 GRT 50,000 pounds tail-weight for all other vessels	7,500 pounds tail-weight for vessels less than 51 GRT 50,000 pounds tail-weight for all other vessels
Can vessel target monkfish during days-at-sea?	During fishing years 1-3: yes, but must qualify for monkfish limited access and be on a multispecies day-at-sea During subsequent fishing years: bycatch only	During fishing years 1-3: yes, but must qualify for monkfish limited access, be on a scallop day-at-sea, and use monkfish mesh During subsequent fishing years: bycatch only	During fishing years 1-3: yes, but must qualify for monkfish limited access, be on a monkfish-only day-at-sea, and use monkfish mesh During subsequent fishing years: No directed days-at-sea; bycatch only in other fisheries
Annual allocation (mt)	Not specified	Not specified	Target TAC
Monkfish-only fleet days-at-sea	Monkfish trips counted against multispecies days-at-sea	Counted as a scallop day-at-sea	40
Monkfish-only individual days-at-sea	None	Up to 40 for combination vessels	None
Spring spawning closure	Not applicable	Not applicable	Yes

Qualification criteria options: Vessels would qualify for monkfish limited access, by meeting one of the following four criteria:

- For vessels less than 51 gross registered tons, monkfish landings of at least 7,500 pounds tial weight or 24,900 pounds whole-weight, or
- For any vessel, monkfish landings of at least 1,000 pounds tail-weight or 3,320 pounds whole-weight on 50 or more trips, or
- For any vessel, monkfish landings of at least 5,000 pounds tail-weight or 16,600 pounds whole-weight on 8 or more trips, or
- For any vessel, monkfish landings of at least 10,000 pounds tail-weight or 33,200 pounds whole-weight on 5 or more trips.

Table 69. Summary of principal management measures for all vessels.

<b>Management measure</b>	<b>Fishing years from May 1, 1998 to April 30, 2001</b>	<b>Fishing years following May 1, 2001</b>
Total Allowable Landings (TAL)	Target	Target
Minimum size limits	North: 11" tail, 17" whole South: 14" tail, 21" whole	North: 11" tail, 17" whole South: 14" tail, 21" whole
Maximum liver to fish landings ratio	25% liver-to-tail 10% liver-to-whole fish	25% liver-to-tail 10% liver-to-whole fish
Dealer and vessel permits	Yes	Yes
Dealer reports	Mandatory	Mandatory
Logbook reports	Mandatory for all day-at-sea vessels and other vessels with federal permits that require logbooks	Mandatory for all day-at-sea vessels and other vessels with federal permits that require logbooks

Table 70. Summary of trip limits for qualifying vessels (criteria defined in Table 68) by permit and gear type.

Trip limits for primary vessels fishing under a day-at-sea.	Fishing years from May 1, 1998 to April 30, 2001		Fishing years following May 1, 2001	
	Preferred	Non-preferred (west of 72°30' W)	Preferred	Non-preferred (west of 72°30' W)
Monkfish-only (all areas)	No trip limit	<u>300 pounds tail-weight per day-at-sea</u>	<u>No monkfish-only days would be allocated; bycatch limits would apply</u>	Up to 300 pounds tail-weight per day-at-sea on monkfish days, if monkfish-only days-at-sea are allocated
Multispecies (all areas and gears)	No trip limit	No trip limit	300 pounds tail-weight per day-at-sea or 25 percent of total weight of fish onboard, whichever is less	Up to 300 pounds tail-weight per day-at-sea on monkfish days, if monkfish-only days-at-sea are allocated
	Preferred and Non-preferred		Preferred	Non-preferred
Scallop dredge (SFMA)	No trip limit, provided the vessel has no dredge aboard  300 pounds tail-weight per day-at-sea, if the vessel has a dredge aboard		200 pounds tail-weight per day-at-sea or 25 percent of total weight of fish onboard, whichever is less	Up to 300 pounds tail-weight per day-at-sea on monkfish days, if monkfish-only days-at-sea are allocated

Table 71 Summary of trip limits for non-qualifying vessels (criteria defined in Table 68) by permit and gear type.

<b>Trip limits for primary fisheries</b>	<b>Fishing years from May 1, 1998 to April 30, 2001</b>	<b>Fishing years following May 1, 2001</b>
Multispecies trawl (NFMA)	300 lbs. tail-weight per day-at-sea or 25% of total weight of fish onboard, whichever is less	300 lbs. tail-weight per day-at-sea or 25% of total weight of fish onboard, whichever is less
Multispecies trawl (SFMA) Multispecies gillnet (SFMA)	50 lbs. tail-weight per day-at-sea	50 lbs. tail-weight per day-at-sea
Multispecies gillnet (NFMA)	300 lbs. tail-weight per day-at-sea or 25% of total weight of fish onboard, whichever is less	300 lbs. tail-weight per day-at-sea or 25% of total weight of fish onboard, whichever is less
Scallop dredge (SFMA)	300 lbs. per day-at-sea	200 lbs. tail-weight per day-at-sea or 25% of total weight of fish onboard
Summer flounder trawl (SFMA)	5 percent total weight of fish on-board	5 percent total weight of fish on-board
Small mesh fisheries (All areas)	50 lbs. per trip	50 lbs. per trip

#### 7.1.4.2.2 Non-preferred alternative 3a

This alternative is the one taken to public hearings in January 1998 as the preferred alternative. It has many of the same features as the (final) preferred alternative, but differs mainly in the qualification criteria for limited access, the amount of multispecies days-at-sea that could be used to target monkfish, no trip limits for the directed fishery, and eligibility for monkfish-only days-at-sea by vessels in the scallop day-at-sea program.

Unlike the preferred alternative, non-preferred alternative 3a would qualify fewer scallop and monkfish-only vessels. The qualification criteria for these vessels would be approximately 50,000 pounds, but vessels would have to qualify by exceeding these criteria on a threshold number of trips. Multispecies vessels that qualify for monkfish limited access could target monkfish during any number of the multispecies days that are allocated to that vessel, as much as 88 days in 1998 for multispecies vessels that receive fleet days. Combination scallop vessels would also be eligible for additional monkfish-only days, so the vessel's combination and monkfish-only days totaled 40 per year. Any vessel that qualifies for monkfish limited access would be able to use its monkfish-only, multispecies, or scallop days-at-sea to target monkfish.

#### 7.1.4.2.3 Non-preferred alternative 3b

This alternative is the one taken to public hearings in January 1998 as the non-preferred alternative. It has many of the same features as the (final) preferred alternative, but differs mainly in the qualification criteria for limited access, the amount of multispecies days-at-sea that could be used to target monkfish, no trip limits for the directed fishery, and eligibility for monkfish-only days-at-sea by vessels in the scallop day-at-sea program.

Non-preferred alternative 3b is similar to non-preferred alternative 3a described above, but all vessels would have to qualify according to the same criteria. Vessels less than 51 gross registered tons could qualify for monkfish limited access if the vessel has monkfish landings during the four-year qualification period that exceed 7,500 pounds tail-weight, or 24,900 pounds whole-weight. To qualify for monkfish limited access, all other vessels would need monkfish landings during the qualification period that exceed 50,000 pounds tail-weight, or 166,000 pounds whole-weight. Certain other options to other management measures were considered as part of a non-preferred alternative during the January 1998 public hearings. These options are summarized in Section 7.1.4.2.1.

#### 7.1.4.3 No action (status quo)

Taking no action will continue current regulations pertaining to landing or possessing monkfish. Two types of regulations apply: state landings limits and restrictions on non-exempt fisheries because of groundfish bycatch concerns. If these regulations remain in place, taking no action would allow unlimited fishing effort in the Mid-Atlantic regulated mesh area and only allow monkfish effort by sink gillnet vessels in portions of the Gulf of Maine and Southern New England. Multispecies and scallop vessels could target monkfish with legal gear during a day-at-sea. Other fisheries (for example using beam trawls or large mesh otter trawls) that target monkfish are currently prohibited. It may be possible, however, that they could be certified to have low groundfish bycatch, because of area, season, or type of fishing gear.

Presently, the states of NJ, NY, CT, RI, MA and NH have minimum size and liver-to-tail landings limits for monkfish. All of these states have implemented an 11" minimum tail size and a 17" minimum length limit in response to the Councils' request in October 1993. These states also have maximum liver to tail weight landings limits, but the details vary from state to state. All but NJ has a 25 percent liver to tail weight limit, but the way it is measured varies. NJ has a 30 percent liver to tail weight limit. Maine is the remaining state with significant monkfish landings. It has not implemented monkfish minimum size restrictions because state regulators believe that discarding will be excessive, with no tangible gain.

Many areas of the northeast region are closed to directed monkfish fishing because of measures to limit mortality and enhance rebuilding of the depressed groundfish stocks. The only time a vessel could fish for monkfish is when it is fishing with legal gear during a multispecies or sea scallop day-at-sea, or when it is participating in an exempted fishery. Any fishery west of 72° 30' W longitude using legal mesh in the Mid-Atlantic regulated mesh area [50 CFR 648.80(c)] is not prohibited from retaining any amount of monkfish. The only other fisheries that

have been certified to have less than five percent groundfish bycatch, are the monkfish sink gillnets in Southern New England (west of 70° W longitude) and portions of the Gulf of Maine.

#### 7.1.4.4 Alternatives considered and rejected

Alternatives 1, 2, and 4 were taken to public hearings in January 1997 as non-preferred alternatives. Due to the preponderance of public comment for (then) preferred alternative 3 and the opposition to Alternative 1, the Councils chose to continue development of Alternative 3 for inclusion in the FMP. Non-preferred alternative 1 would manage monkfish with a limited access permit moratorium and set seasonal quotas for monkfish limited access vessels. Trip limits for vessels that do not qualify for limited access would control bycatch, so these vessels do not begin targeting monkfish. Non-preferred alternative 2 would use the same approach as non-preferred alternative 1, but the trip limits for vessels that do not qualify would be much higher to accommodate monkfish landings when they are part of a targeted mixed-species complex. Non-preferred alternative 4 would restrict days-at-sea use by vessels that qualify for limited access (similar to the preferred alternative), but the trip limits for vessels that do not qualify were set low to allow for higher days-at-sea allocations for the directed monkfish fishery. These non-preferred alternatives and other management measures that were initially considered by the Councils are described in more detail in the following sections.

##### 7.1.4.4.1 Non-preferred alternative 1

###### Bycatch trip limits and quota controlled limited access fishery

Non-preferred alternative 1 would establish regulations for two broadly-defined monkfish fishing sectors (Table 72). Vessels that target other species and have a modest monkfish bycatch would be regulated by other FMPs, but would have limits on the amount and size of monkfish that could be landed. Any vessel permitted in another fishery (e.g. sea scallops, summer flounder, multispecies) or participating in an unregulated fishery would be able to land their monkfish bycatch up to the trip limit considered to be customary in that fishery. Vessels would not have to qualify to land monkfish bycatch based on historic participation by that vessel. Vessels fishing in some fisheries, however, have negligible monkfish bycatch (e.g. surf clam fishery) and would not be able to land monkfish.

The other fishing sector would be vessels that target monkfish on an entire fishing trip or only for portions of a trip. These vessels could land their entire catch of monkfish, subject to limitations on minimum size and liver to tail landings ratios, as long total monkfish landings by this fishery had not yet exceeded the seasonal quota. Vessels would be eligible to participate in this fishery to target monkfish if their historic landings of monkfish exceeded the qualification criteria. The Council is offering a choice of three qualification criteria. The most liberal will qualify any vessel with a history of landing monkfish during the four years prior to the control date. Over 1,870 vessels would qualify and if many of these vessels used the opportunity to target monkfish, the seasonal quotas will not last very long. More restrictive entry criteria will decrease the number of vessels that participate in the directed fishery and the quotas could last considerably longer.

**Table 72.** Outline of management measures within non-preferred alternative 1, depending on whether a vessel qualified for limited access and whether the quota was available or not.

Class	Qualification criteria	Trip limit before reaching limited entry quota	Trip limit after reaching limited entry quota
Limited entry fishery	Based on historic performance	No trip limit	Trip limit ranging from 100 to 1,000 pounds tail weight or 332 to 3,320 pounds whole weight
Bycatch fishery	Must have a permit to fish for another federally regulated species	Trip limit based on historic distribution of landings within broadly defined fisheries and/or based on maximum ratios of monkfish to total weight of fish on-board	

The management measures in common to all three alternatives would apply to these vessels. The minimum size and liver to tail ratios would apply to both fishery sectors. The minimum mesh size would apply only to the limited access fishery. Dealer permits would be required of any primary dealer that accepts the landings of monkfish, whether from targeted fishing activity or from bycatch of monkfish. Vessel and operator permits for monkfish would only be required of vessels that qualify for limited access and the captains that operate them. Logbook data would be required of any vessel that qualifies for limited access or any other vessel that otherwise would be required to submit a logbook for another fishery, e.g. sea scallops, multispecies, summer flounder, etc.

#### 7.1.4.4.1.1 **Bycatch trip limits**

Any vessel participating in the fisheries listed in Table 73 would have limits on the amount of monkfish that could be landed. Fisheries where the length of the trip is monitored (sea scallops and multispecies) could also have higher monkfish limits based on the trip length, measured in total days-at-sea. In the trawl fishery for multispecies, for example, a vessel landing monkfish after a three day trip could only land up to 1,000 pounds of monkfish tails or 3,320 pounds of whole monkfish. That same vessel landing monkfish after a ten-day trip could only land up to 2,000 pounds of monkfish tails or 6,640 pounds of whole monkfish.

Other fisheries, notably those using small mesh, would also be limited by to a maximum proportion of monkfish landings to the trip's total landings. A vessel that had 500 pounds of fish (summer flounder and monkfish) on board would be allowed to possess 250 pounds of monkfish, in any form. That same vessel that had 3,000 pounds of fish on board would be able to possess only 1,000 pounds of monkfish, in any form.

Fishery categories with a single monkfish limit (e.g. 100 pounds tail weight per trip) or those with lesser of two trip limits (e.g. 50 percent of total weight of fish on-board, or 1,000 pounds tail weight per trip, **whichever is less**) would be subject to a possession limit. Vessels with greater amounts of monkfish on board would be in violation of the trip limits while at sea. It is impractical to measure large quantities of fish at sea, and these limits would more likely be enforced at the point of landing. Fishery categories with the greater of two trip limits (1,000 pounds tail weight) per trip or 200 pounds per day-at-sea, **whichever is more**) would be subject to a landing limit. The landing limit is necessary, because law enforcement would be unable to determine trip length until the end of the trip.

There are cases where vessels that fish with like gear would be subject to more than one trip limit. A vessel with gillnets and dredges, for example, would have different trip limits in the NFMA and the SFMA (Table 73). Trip limits that depend on where the vessel fished are impossible to enforce and easily circumvented. In cases where a vessel transits through an area to fish in the other one, or when a vessel fishes in more than one area, the trip or possession limit for that vessel will be the lesser of the two limits. Vessel monitoring systems (aka VTS) tell

where a vessel has been, but not necessarily where it fished. The VMS will, therefore, be helpful in monitoring which trip limit would apply to each vessel, depending on its record of location during the trip.

A scallop dredge vessel, for example, that fishes on Georges Bank and lands its catch in Gloucester, MA would have a trip limit of 1,600 pounds tail weight or 200 pounds tail weight per day-at-sea, whichever is more. These limits would apply because the vessel transited the NFMA and possibly fished there, too. Likewise, a scallop dredge vessel from New Bedford, MA that fishes on Fippinees Ledge in the Gulf of Maine would also have a monkfish trip limits of 1,600 pounds tail weight or 200 pounds tail weight per day-at-sea, whichever is more.

#### **7.1.4.4.1.2 Limited access fishery measures**

The limited access fishery would be managed by limiting the number of vessels that can land monkfish in excess of the trip limits and by quotas. Their landings would be monitored through mandatory reporting to determine when the quota is reached. When the landings are expected to equal or exceed the seasonal quota, NMFS will notify these vessels and they will not be able to land monkfish above the close season possession limits.

##### **7.1.4.4.1.2.1 Qualification**

Vessels would be eligible for the monkfish limited access fishery under one of the four criteria listed the preferred option (Table 68).

**Table 73.** Monkfish bycatch allowances for non-preferred alternative 1, defined by gear and fishery.

Gear	Target species	Proposed trip limit	
		Northern area	Southern area
Trawl	Any fishery that requires a minimum regulated trawl mesh and is regulated by days-at-sea allocations, including multispecies and scallops	1,000 pounds (tail weight) per trip or 200 pounds (tail weight) per day-at-sea, whichever is more	1,000 pounds (tail weight) per trip or 200 pounds (tail weight) per day-at-sea, whichever is more
	Any fishery that requires a minimum regulated trawl mesh and is not regulated by days-at-sea allocations, including summer flounder	Possession limit of 50 percent of total weight of fish on-board, or 1,000 pounds (tail weight) per trip, whichever is less.	Possession limit of 50 percent of total weight of fish on-board, or 1,000 pounds (tail weight) per trip, whichever is less.
	All other species and permits, including fisheries targeting whiting, squid, scup, and dogfish	Possession limit of 10 percent of total weight of fish on-board, or 1,000 pounds (tail weight) per trip, whichever is less.	Possession limit of 10 percent of total weight of fish on-board, or 1,000 pounds (tail weight) per trip, whichever is less.
Gillnet	Multispecies (with permit)	300 pounds (tail weight) per trip or 100 pounds (tail weight) per day-at-sea, whichever is more	200 pounds (tail weight) per trip or 100 pounds (tail weight) per day-at-sea, whichever is more
	Dogfish (not under days-at-sea program or without groundfish permit)	100 pounds (tail weight) per trip	200 pounds (tail weight) per trip
	All other species and permits	No possession permitted	
Dredge	Scallops (with limited access permit and fishing under days-at-sea)	1,600 pounds (tail weight) per trip or 200 pounds (tail weight) per day-at-sea, whichever is more	4,000 pounds (tail weight) per trip or 400 pounds (tail weight) per day-at-sea, whichever is more
	All other species and permits	100 pounds (tail weight) per trip	
All other gears		100 pounds (tail weight) per trip	

**Table 74.** TAL allocations for non-preferred alternative 1.

Year beginning July 1	Total allowable landings		Expected fishing mortality		Expected landings with trip limits and multispecies DAS		Target allocation for monkfish-only fishery
	Northern area	Southern area	Northern area	Southern area	Northern area	Southern area	
1991-1993					6,505	10,488	
1996	5,500	8,500	0.13	0.37	2,487	4,184	7,329
1997	3,000	6,000	0.07	0.26	2,097	3,631	3,290
1998	2,937	5,757	0.07	0.25	2,016	3,388	3,290
1999	2,937	5,757	0.07	0.25	2,016	3,388	3,290
2000	2,874	5,522	0.07	0.24	1,952	3,153	3,290
2001	2,811	5,286	0.07	0.23	1,889	2,917	3,290
2002	2,148	4,927	0.05	0.22	1,889	2,917	2,268

*7.1.4.4.1.3 Seasonal quotas*

Annual quotas for the limited access fishery would be determined by deducting the expected annual bycatch from the annual TAL objectives (Table 74). The TAL for the fishing year beginning July 1, 1996 is 5,500 mt whole weight in the NFMA and 8,500 mt in the SFMA. Based on historical landings, adjusted for the regulations already in place for multispecies, sea scallops, and summer flounder and adjusted for the proposed non-preferred alternative 1 trip limits (Table 73), the Council anticipates the landings of monkfish from fisheries managed via trip limits to be 2,487 mt in the NFMA and 4,184 mt in the SFMA. This expected landings would leave 7,329 mt to be allocated to the limited access fishery in the fishing year beginning July 1, 1996. This allocation would not be further subdivided by management area, because the number of vessels would be determined by area non-specific qualification criteria. Vessels in the limited access fishery will, therefore, be able to fish anywhere within U.S. waters for monkfish.

The annual limited access fishery quota would be allocated in unequal portions during four fishing seasons. The allocation of the quota would be weighted to allow more landings during the early winter season when prices, especially liver prices, are higher. The allocation would also be weighted to reduce monkfish landings during the spawning season (April to June), when monkfish are more vulnerable to exploitation. The Council proposes the following seasonal allocations to meet these objectives:

**Table 75.** Seasonal TAL allocations proposed for non-preferred alternative 1.

	July 1 to October 14	October 15 to January 15	January 16 to March 31	April 1 to June 30
Percent of annual quota	25%	50%	25%	0%
Year beginning July 1, 1996	1,832	3,664	1,832	0
“ 1997	823	1,645	823	0
“ 1998	823	1,645	823	0
“ 1999	823	1,645	823	0
“ 2000	823	1,645	823	0
“ 2001	823	1,645	823	0
“ 2002	567	1,134	567	0

During the second year of management, beginning July 1, 1997, the annual quota would be determined by deducting the expected bycatch from the TALs for that year. The TAL objective for the second year would be 3,000 mt in the NFMA and 6,000 mt in the SFMA. The expected bycatch during the same time period is 2,097 mt and 3,631 mt, respectively (Table 74). This calculation would leave an allocation of 3,290 mt for the limited access fishery. The annual quota of 3,290 mt would be allocated by season as shown in Table 75.

Consistent with the biological objectives when monkfish are overfished (Section 2.4.1.1), the limited access quota would remain constant at 3,290 mt each year through year seven (2001). Reductions in bycatch between fishing year 1998 and fishing year 2002 would contribute to reducing fishing mortality toward the overfishing definition threshold (Section 2.4.1.1).<sup>23</sup>

Although it is difficult to anticipate all the changes in monkfish bycatch that might occur in other regulated fisheries over the next seven years, the TAL objective to meet the overfishing definition threshold mortality would be 2,148 mt in the NFMA and 4,927 mt in the SFMA. The expected bycatch for the same period is 1,889 mt in the NFMA and 2,917 mt in the SFMA, leaving 2,268 mt for the limited access fishery.

**7.1.4.4.1.4** *Closed season possession limits for monkfish limited access vessels.*

Monkfish vessels would be regulated by a reduced trip limit when the monkfish limited access fishery was closed. Monkfish landings by these limited access vessels would continue to be counted against the quota, even though the cumulative monkfish landings to date already exceeded it. The additional monkfish landings by limited access vessels, even though controlled by a restrictive trip limit, would create a quota overage. NMFS would make adjustments in the following two fishing seasons, under the framework notice action procedure, to account for the previous overage.

The Council will choose a trip limit based on public comments for one of the two trip limit options: a) 100 pounds tail weight or 332 pounds whole weight, or b) 1,000 pounds tail weight or 3,320 pounds whole weight.

<sup>23</sup> The values of the reference points and associated TALs had changed since this alternative taken to public hearing in 1997, due to a new stock assessment. This revision had not been carried through to the TAL calculations in non-preferred alternatives.

#### 7.1.4.4.1.5 Framework adjustments

After July 1, 1997<sup>24</sup>, any overages or underages of a seasonal quota would be corrected by adjusting (up or down) the subsequent two seasonal quotas. These adjustments could apply across fishery years to adjust for previous overages or underages in the previous year's annual quota. Changes to the seasonal quota will be made by NMFS via notice action, without prior approval of the Council and without first publishing a proposed rule. The effectiveness of this published rule would take place no less than 10 days before the projected end of the fishing season to allow fishermen to prepare for the seasonal fishery closure and to complete their trips already underway. Adjustments can be made mid-season, even if the affect of such adjustment causes the fishery to close.

Upward adjustments can be made to change the (zero) closure in the spring season (April 1 to June 30), if the quota adjustment is larger than 5 percent of the annual quota. The adjustment if the amount is less than 5 percent of the annual quota would otherwise be reserved to adjust the following two seasons that would be expected to have a quota allocation (July 1 to October 14 and October 15 to January 15).

**Table 76.** Example of in-season quota adjustments to account for seasonal overharvest of the previous season's quota.

	Seasonal Quota	Adjustment	Revised Quota	Landings	Overage/(Underage)
97-S1	823	0	823	1,223	400
97-S2	1,645	(200)	1,445	1,500	55
97-S3	823	(227.5)	595.5	0	0
97-S4	0	(27.5)	(27.5)	0	27.5
98-S1	823	(13.75)	809.25	0	0
98-S2	1,645	(13.75)	1,631.25	0	0

Consider, for example, a season when the seasonal quota allocation is 1,645 mt. As of the date of publication to make a seasonal adjustment, the fishery had already taken 1,250 mt, at a rate of 25 mt per day. An adjustment for an overage within the preceding season calls for a reduction of 200 mt (and 200 mt in the next season, too), leaving a total adjusted quota of 1,445 mt. The public notice, however, must be published 10 days in advance of when the season was projected to end. Since the adjustment would result in 1,445 mt and 1,250 mt had already been taken, the season under the proposed framework action would be required to remain open for 10 days when 1,500 mt would be taken. The net result of the adjustment and the seasonal closure would result in an overage of 55 mt, to be accounted for by adjusting the next two seasons in equal amounts (Table 76). Obviously, earlier adjustments to the quota would be less complex and would be less likely to result in mismatches between landings and the quota.

<sup>24</sup> Overages of the annual quota created by the date of implementation would not be carried forward into the following fishing year.

**Table 77.** Example of a quota adjustment that would be carried forward into the next fishing year.

	Seasonal Quota	Adjustment	Revised Quota	Landings	Overage/(Underage)
97-S1	823	0	823	1,223	400
97-S2	1,645	0	1,645	1,645	0
97-S3	823	(200)	623	100	0
97-S4	0	(200)	(200)	0	200
98-S1	823	(100)	723	0	0
98-S2	1,645	(100)	1,545	0	0

If the fishing season following one where an overage or underage occurred has concluded, either by quota closure or by the passage of time, the adjustment would be applied to the next two periods that adjustments could be made (Table 77). If an adjustment would result in a negative quota, it would automatically cause an overage that would be applied to the next two periods (Table 76)

#### 7.1.4.4.2 Non-preferred alternative 2

##### Mixed catch trip limits and quota-controlled limited access fishery

Non-preferred alternative 2 is a hybrid between non-preferred alternative 1 (quota management) and preferred alternative 3 (vessels with a multispecies permit can target monkfish). The Council has chosen this management system as a non-preferred alternatives because it does not adequately control fishing mortality, imposes trip limits on fisheries that target monkfish, and leaves a very small monkfish allocation for the limited access fishery. The high trip limits would allow opportunities for fishermen that formerly landed monkfish as a bycatch to begin targeting monkfish under a 'trip-limit' directed fishery. Even at these high trip limits, some fishermen could continue to fish for monkfish and high-grade their catch, i.e. discard fish and retain livers up to the liver to tail maximum ratio.

The main reason to retain this proposed management program as a non-preferred alternative is to demonstrate the effect of increasing trip limits under non-preferred alternative 1. The higher landings anticipated with these trip limits (without taking into account possible effort shifts within a trip limit fishery) reduce the quota for the limited access fishery. This reduced allocation occurs because more vessels would be able to land, and possibly target, monkfish without discarding fish or moving to other areas to fish for other species. Some of the discarded monkfish survive, although the actual discard survival varies by season, depth, and gear type. The trip limits, therefore, can reduce mortality and allow for increased landings in a targeted fishery, one that may have better size selectivity than the bycatch fisheries.

Non-preferred alternative 2 also would establish two broadly-defined monkfish fishing categories (Table 78), a bycatch or days-at-sea fishery and a limited access fishery. All but the largest vessels that target monkfish would be able to retain monkfish as bycatch or as a mixed catch when monkfish is one a few target species. These vessels would be regulated by the days-at-sea programs for other species (e.g. sea scallops and multispecies), but would also have high limits on the amount of monkfish they could land and a minimum monkfish size limit. Any vessel permitted in another fishery (e.g. summer flounder, squid, mackerel, and butterfish, etc.) would be able to land their monkfish catch up to the trip limit considered customary in a mixed species fishery where monkfish was a bycatch. These vessels (days-at-sea or permitted vessels where monkfish is a bycatch) would not have to qualify to landing monkfish based on historic participation by that vessel. Vessels fishing in some fisheries, however, have negligible monkfish bycatch (e.g. surf clam fishery), do not catch monkfish as a target species, and would be unable to land monkfish.

**Table 78.** Outline of management measures within non-preferred alternative 2, depending on whether a vessel qualified for limited access and whether the quota was available or not.

<b>Class</b>	<b>Qualification criteria</b>	<b>Trip limit before reaching limited entry quota</b>	<b>Trip limit after reaching limited entry quota</b>
Limited entry fishery	Based on historic performance, no DAS permit	No trip limit	Landings prohibited or a minimal amount
Days-at-sea fisheries	Must have DAS permit	Higher trip limits that allow targeting	Landings prohibited if they exceed the TAL
Bycatch fishery	Must have a permit to fish for another federally regulated species	Trip limit based on historic averages for broadly defined fisheries	
Not qualified	All others	Landings prohibited or a minimal amount	

The other fishing sector would be vessels that target monkfish on an entire fishing trip or only for portions of a trip. These vessels could land their entire catch of monkfish, subject to limitations on minimum size and liver to tail landings ratios, as long total monkfish landings by this fishery had not yet exceeded the seasonal quota. Vessels would be eligible to participate in this fishery to target monkfish if their historic landings of monkfish exceeded the qualification criteria. The Council is offering a choice of three qualification criteria. The most liberal will qualify any vessel with a history of landing monkfish during the four years prior to the control date. Over 775 vessels would qualify and if many of these vessels used the opportunity to target monkfish, the seasonal quotas will not last very long. More restrictive entry criteria will decrease the number of vessels that participate in the directed fishery and the quotas could last considerably longer.

The management measures in common to all three alternatives would apply to these vessels. The minimum size and liver to tail ratios would apply to both fishery sectors (mixed catch and limited access). The minimum mesh size would apply only to the limited access fishery. Dealer permits would be required of any primary dealer that accepts the landings of monkfish, whether from targeted fishing activity or from bycatch of monkfish. Vessel and operator permits for monkfish would only be required of vessels that qualify for limited access and the captains that operate them. Logbook data would be required of any vessel that qualifies for limited access or any other vessel that otherwise would be required to submit a logbook for another fishery, eg. sea scallops, multispecies, summer flounder, etc.

*7.1.4.4.2.1 Bycatch trip limits*

Any vessel participating in the fisheries listed in Table 79 would have limits on the amount of monkfish that could be landed. Fisheries where the length of the trip is monitored (sea scallops and multispecies) could also have higher monkfish limits based on the trip length, measured in total days-at-sea. In the trawl fishery for multispecies, for example, a vessel landing monkfish after a three day trip could land up to 3,500 pounds of monkfish tails or 11,620 pounds of whole monkfish in the NFMA. That same vessel landing monkfish after a ten-day trip in the NFMA could only land up to 7,000 pounds of monkfish tails or 23,240 pounds of whole monkfish.

Other fisheries, notably those using small mesh, would also be limited by to a maximum proportion of monkfish landings to the trip's total landings. A vessel that had 500 pounds of fish (whiting and monkfish, for example) on board would be allowed to possess 50 pounds of monkfish, in any form. That same vessel that had 3,000 pounds of fish on board would be able to possess only 300 pounds of monkfish, in any form.

Fishery categories with a single monkfish limit (e.g. 100 pounds tail weight per trip) or those with a proportional limit (eg. 10 percent of total weight of fish on-board) would be subject to a possession limit. Vessels

with higher amounts of monkfish on board would be in violation of the trip limits while at sea. It is impractical to measure large quantities of fish at sea, and these limits would more likely be enforced at the point of landing. Fishery categories with the greater of two trip limits (1,000 pounds tail weight per trip or 200 pounds per day-at-sea, **whichever is more**) would be subject to a landing limit. The landing limit is necessary, because law enforcement would be unable to determine trip length until the end of the trip.

There are cases where vessels that fish with like gear would be subject to more than one trip limit. Vessels with gillnets and dredges, for example, have different trip limits in the NFMA and the SFMA (Table 79). Trip limits that depend on where the vessel fished are impossible to enforce and easily circumvented. In cases where a vessel transits through an area to fish in the other one, or when a vessel fishes in more than one area, the trip or possession limit for that vessel will be the lesser of the two limits. Vessel monitoring systems (aka VTS) tell where a vessel has been, but not necessarily where it fished. The VMS will, therefore, be helpful in monitoring which trip limit would apply to each vessel, depending on its record of location during the trip.

A scallop dredge vessel, for example, that fishes on Georges Bank and lands its catch in Gloucester, MA would have a trip limit of 5,500 pounds tail weight or 1,200 pounds tail weight per day-at-sea, whichever is more. These limits would apply because the vessel transited the NFMA and possibly fished there, too. Likewise, a scallop dredge vessel from New Bedford, MA that fishes on Fippinees Ledge in the Gulf of Maine would also have a monkfish trip limits of 5,500 pounds tail weight or 1,200 pounds tail weight per day-at-sea, whichever is more.

**Table 79.** Monkfish bycatch allowances for non-preferred alternative 1, defined by gear and fishery.

Gear	Target species	Proposed trip limit	
		Northern area	Southern area
Trawl	Regulated groundfish (with permit and fishing under days-at-sea)	3,500 pounds (tail weight) per trip or 700 pounds (tail weight) per day-at-sea, whichever is more	5,000 pounds (tail weight) per trip or 600 pounds (tail weight) per day-at-sea, whichever is more
	Summer flounder (with permit and fishing under quota)	No possession permitted	5,000 pounds (tail weight) per trip
	Whiting, squid, and scup (with permit)	Limit under small mesh regulations set at 10 percent of all other species on-board.	Limit under small mesh regulations set at 10 percent of all other species on-board.
	Dogfish (not under days-at-sea program or without groundfish permit)	100 pounds (tail weight) per trip	200 pounds (tail weight) per trip
	Scallops (with limited access permit and fishing under days-at-sea)	No category	2,500 pounds (tail weight) per trip or 500 pounds (tail weight) per day-at-sea, whichever is more
	All other species and permits	100 pounds (tail weight) per trip	100 pounds (tail weight) per trip
Gillnet	Multispecies (with permit)	1,100 pounds (tail weight) per trip or 1,100 pounds (tail weight) per day-at-sea, whichever is more	3,000 pounds (tail weight) per trip or 3,000 pounds (tail weight) per day-at-sea, whichever is more
	Dogfish (not under days-at-sea program or without groundfish permit)	100 pounds (tail weight) per trip	200 pounds (tail weight) per trip
	All other species and permits	No possession permitted	
Dredge	Scallops (with limited access permit and fishing under days-at-sea)	5,500 pounds (tail weight) per trip or 1,200 pounds (tail weight) per day-at-sea, whichever is more	17,000 pounds (tail weight) per trip or 1,400 pounds (tail weight) per day-at-sea, whichever is more
	All other species and permits	No possession permitted	
All other gears		100 pounds (tail weight) per trip	

#### 7.1.4.4.2.2 *Limited access fishery measures*

The limited access fishery would be managed by limiting the number of vessels that can land monkfish in excess of the trip limits and by quotas. Their landings would be monitored through mandatory reporting to determine when the quota is reached. When the landings are expected to equal or exceed the seasonal quota, NMFS will notify these vessels and they will not be able to land monkfish above the close season possession limits.

##### 7.1.4.4.2.2.1 **Qualification**

Vessels would be eligible for the monkfish limited access fishery under one of the four criteria listed in Table 68.

##### 7.1.4.4.2.2.2 **Seasonal quotas**

Annual quotas for the limited access fishery would be determined by deducting the expected annual bycatch from the annual TAL objectives (Table 80). The TAL for the fishing year beginning July 1, 1996 is 5,500 mt whole weight in the NFMA and 8,500 mt in the SFMA. Based on historical landings, adjusted for the regulations already in place for multispecies, sea scallops, and summer flounder and adjusted for the proposed Alternative 2 trip limits (Table 79), the Council anticipates the landings of monkfish from fisheries managed via trip limits to be 4,109 mt in the NFMA and 5,604 mt in the SFMA. This expected landings would leave 4,287 mt to be allocated to the limited access fishery in the fishing year beginning July 1, 1996. This allocation would not be further subdivided by management area, because the number of vessels would be determined by an area non-specific qualification criteria. Vessels in the limited access fishery will, therefore, be able to fish anywhere within U.S. waters for monkfish.

The annual limited access fishery quota would be allocated in unequal portions during four fishing seasons. The allocation of the quota would be weighted to allow more landings during the early winter season when prices, especially liver prices, are higher. The allocation would also be weighted to reduce monkfish landings during the spawning season (April to June), when monkfish are more vulnerable to exploitation. The Council proposes the following seasonal allocations to meet these objectives:

During the second year of management, beginning July 1, 1997, the annual quota would be determined by deducting the expected bycatch from the TALs for that year. The TAL objective for the second year would be 3,000 mt in the NFMA and 6,000 mt in the SFMA. The expected bycatch during the same time period is 3,411 mt and 4,859 mt, respectively (Table 80). This calculation would leave an allocation of 730 mt for the limited access fishery. The annual quota of 730 mt would be allocated by season as shown in Table 81.

Consistent with the biological objectives when monkfish are overfished (Section 3.4), the limited access quota would remain constant at 730 mt each year through year seven (2001). Reductions in bycatch between fishing year 1998 and fishing year 2002 would contribute to reducing fishing mortality toward the overfishing definition threshold (Section 2.4.1.1).

**Table 80.** Total allowable landings (TAL) associated with non-preferred alternative 2.

Year beginning July 1	Total allowable landings		Expected fishing mortality		Expected landings with trip limits and multispecies DAS		Target allocation for monkfish-only fishery
	Northern area	Southern area	Northern area	Southern area	Northern area	Southern area	
1991-1993					6,505	10,488	
1996	5,500	8,500	0.13	0.37	4,109	5,604	4,287
1997	3,000	6,000	0.07	0.26	3,411	4,859	730
1998	2,890	5,686	0.07	0.25	3,300	4,546	730
1999	2,890	5,686	0.07	0.25	3,300	4,546	730
2000	2,779	5,385	0.07	0.24	3,190	4,245	730
2001	2,669	5,085	0.06	0.22	3,080	3,944	730
2002	2,148	4,927	0.05	0.22	3,080	3,944	51

**Table 81.** Seasonal TAL allocations proposed for non-preferred alternative 2.

	July 1 to October 14	October 15 to January 15	January 16 to March 31	April 1 to June 30
Percent of annual quota	25%	50%	25%	0%
Year beginning July 1 1996	1,072	2,144	1,072	0
“ 1997	183	365	183	0
“ 1998	183	365	183	0
“ 1999	183	365	183	0
“ 2000	183	365	183	0
“ 2001	183	365	183	0
“ 2002	13	26	13	0

Although it is difficult to anticipate all the changes in monkfish bycatch that might occur in other regulated fisheries over the next seven years, the TAL objective to meet the overfishing definition threshold mortality would be 2,148 mt in the NFMA and 4,927 mt in the SFMA. The expected bycatch for the same period is 3,080 mt in the NFMA and 3,944 mt in the SFMA, leaving 55 mt for the limited access fishery.

#### 7.1.4.4.2.2.3 Closed season possession limits for monkfish limited access vessels

The possession limits for limited access vessels when no quota is available would be the same as non-preferred alternative 1 (Section 7.1.4.4.1.1).

### 7.1.4.4.2.3 **Framework adjustments**

The same measures and adjustment process described in non-preferred alternative 1 (Section 7.1.4.4.1.5) would apply.

### 7.1.4.4.3 Non-preferred alternative 4

#### Days-at-sea effort control

Like non-preferred alternative 1, the days-at-sea effort control alternative would establish regulations for two broadly-defined monkfish fishing sectors (Table 82). Vessels that target other species and have a modest monkfish bycatch would be regulated by other FMPs, but would have limits on the amount and size of monkfish that could be landed. Any vessel permitted in another fishery (e.g. sea scallops, summer flounder, multispecies) or participating in an unregulated fishery would be able to land their monkfish bycatch up to the trip limit considered to be customary in that fishery. Vessels would not have to qualify to land monkfish bycatch based on historic participation by that vessel. Vessels fishing in some fisheries, however, have negligible monkfish bycatch (e.g. surf clam fishery) and would not be able to land monkfish.

**Table 82.** Classification of vessels for non-preferred alternative 4.

<b>Class</b>	<b>Qualification criteria</b>	<b>Trip limit while fishing a monkfish-only day-at-sea</b>	<b>Trip limit when not fishing under a monkfish-only day-at-sea</b>
Limited entry fishery	Based on historic performance	No trip limit	Trip limit ranging from 100 to 1,000 pounds tail weight or 332 to 3,320 pounds whole weight
Bycatch fishery	Must have a permit to fish for another federally regulated species	No allocations of monkfish-only days-at-sea apply. Trip limits while fishing in another fishery based on historic distribution of landings within broadly defined fisheries and/or based on maximum ratios of monkfish to total weight of fish on-board	

The other fishing sector would be vessels that target monkfish on an entire fishing trip or only for portions of a trip. These vessels, fishing on a monkfish-only day-at-sea, could land their entire catch of monkfish, subject to limitations on minimum size and liver to tail landings ratios. Unlike non-preferred alternative 1, however, the limited access vessels could fish their monkfish-only days-at-sea at any time, except for the spawning closure from April 1 to June 30. Each vessel would be allocated the same number of days (i.e. a fleet allocation) to target monkfish

Unlike preferred alternative 3, the fleet days-at-sea allocations vary based on the target TAL for the monkfish-only fishery and the number and monkfish landings history of qualifying vessels. Days-at-sea allocations would be lower for less restrictive qualification criteria and bycatch trip limits. In the first case, more vessels would generate more monkfish landings per fleet day-at-sea. In the second case, the target TAL for the monkfish-only fishery would be lower because the expected bycatch is higher.

Vessels would be eligible to participate in this fishery to target monkfish if their historic landings of monkfish exceeded the qualification criteria. The Council will choose one of three possible qualification criteria for

the final amendment. One of the possible criteria is non-preferred because it gives unreasonably small days-at-sea limits.

Multispecies limited access vessels that qualify for the monkfish-only fishery could choose to forfeit their monkfish-only days and target monkfish during a multispecies day. These vessels would be required to make an annual declaration at the start of the fishing season. This exception would be advantageous for vessels that fish in a mixed fishery where monkfish are one of the targeted fisheries to fish a multispecies day-at-sea and retain their entire catch of monkfish.

The management measures in common to all three alternatives would apply to these vessels. The minimum size and liver to tail ratios would apply to both fishery sectors. The minimum mesh size would apply only to the limited access fishery. Dealer permits would be required of any primary dealer that accepts the landings of monkfish, whether from targeted fishing activity or from bycatch of monkfish. Vessel and operator permits for monkfish would only be required of vessels that qualify for limited access and the captains that operate them. Logbook data would be required of any vessel that qualifies for limited access or any other vessel that otherwise would be required to submit a logbook for another fishery, eg. sea scallops, multispecies, summer flounder, etc.

#### **7.1.4.4.3.1 Monkfish possession limits**

In addition to the common management measures that apply to any monkfish landings (minimum size, maximum liver to tail landings ratio, mandatory reporting), a trip or possession limit would apply to vessels that do not qualify for monkfish limited access.

##### **7.1.4.4.3.1.1 Day-at-sea controlled fisheries**

One of the following two options would be chosen by the Council depending on the monkfish limited access qualification criteria selected. The reason for the difference is to allow for a 50 days-at-sea fleet allocation if reasonable adjustments to the proposed trip limit achieved sufficient reductions in bycatch and a corresponding increase in the target TAL allocation for the limited access fishery.

- a) Vessels fishing a multispecies or sea scallop day-at-sea would be unable to land more than 200 pounds tail weight or 664 pounds whole weight of monkfish per day-at-sea. For example, a vessel landing monkfish after a 4 day trip would be able to land 800 pounds of monkfish tails (plus 200 pounds of livers). Another vessel landing monkfish after a 15 day trip would be able to land 3,000 pounds of monkfish tails (plus 750 pounds of livers). This trip limit would be chosen if the limited access qualification criteria is either one pound, one trip or 50,000 pounds tail weight from February 28, 1991 to February 27, 1995 (Table 68),
- or, b) Vessels fishing a multispecies or sea scallop day-at-sea would be unable to land more than 175 pounds tail weight or 581 pounds whole weight of monkfish per day-at-sea. For example, a vessel landing monkfish after a 4 day trip would be able to land 700 pounds of monkfish tails (plus 175 pounds of livers). Another vessel landing monkfish after a 15 day trip would be able to land 2,625 pounds of monkfish tails (plus 656 pounds of livers). This trip limit would be chosen if the limited access qualification criteria is the third option (Table 68).

##### **7.1.4.4.3.1.2 Exempted fisheries**

The Councils will choose a possession limit that is between zero and ten percent of the total weight of fish on board. The limit selected by the Councils will depend on public comment on the proposed bycatch limit and on the distribution of landings per trip that indicate amounts of unavoidable bycatch in each fishery.

At the upper end of the possible range, vessels fishing in an exempted fishery (other than summer flounder) would be able to possess no more than 10 percent of the total weight of fish onboard. This possession limit would

apply to the summer flounder fishery and the squid, mackerel, and butterfish fisheries conducted in the Mid-Atlantic region. For example, a vessel with 900 pounds of summer flounder on board would be able to retain 100 pounds of monkfish tails and livers.

#### 7.1.4.4.3.1.3 Summer flounder vessels

Vessels with a summer flounder permit that are fishing for summer flounder could retain monkfish as long as they amount to no more than 10 percent of the total weight of fish onboard. In other words, a permitted vessel fishing with regulated mesh and 1,500 pounds of flounder and other fish would be able to retain and land 167 pounds of monkfish tails and livers. If the livers from the monkfish weighed 25 percent of the total tail weight, then the vessel could have 33 pounds of livers and 134 pounds of tails.

#### 7.1.4.4.3.2 ***Multispecies fishery measures***

The following management measures would apply to any vessel operating under a multispecies limited access permit, either a days-at-sea or an exempted category.

##### 7.1.4.4.3.2.1 Declared days out of the fishery

Specified periods to protect groundfish spawning when multispecies vessels are required to declare out of the fishery would also apply to multispecies days-at-sea used to target monkfish. Multispecies days-at-sea vessels that have declared out of the multispecies fishery, for any reason including the fulfillment of its 20 day out periods, would be prohibited from possessing monkfish.

##### 7.1.4.4.3.2.2 Eligibility for monkfish-only days-at-sea

Vessels with multispecies permits may qualify for monkfish limited access and receive additional monkfish fleet days-at-sea to target and retain only monkfish. In many cases, these qualifying vessels will have qualified based on their monkfish landings in a mixed fishery. This condition often exists in the Gulf of Maine, where vessels target American plaice, winter flounder, and monkfish.

These vessels would be given credit for their monkfish history by qualifying for monkfish limited access. Instead of forcing these vessels with qualifying monkfish history to discard their monkfish catches above the trip limit, they would be able to target monkfish and regulated multispecies without a monkfish trip limit if they forfeit their monkfish-only days-at-sea. Each qualifying vessel with a multispecies permit would make an annual declaration at the start of the fishing season whether to forfeit its monkfish-only days-at-sea and fish its multispecies days without a monkfish trip limit. Trips where monkfish were targeted would count against the vessel's multispecies days, even if monkfish was the only landed species.

##### 7.1.4.4.3.2.3 Multispecies vessels that are exempt from the days-at-sea requirements

Some multispecies vessels are exempt from the multispecies days-at-sea limits, because of vessel size or type of gear used. These vessels (rod and reel or handline permits, and vessels 30 feet and electing not to fish under days-at-sea) can now retain up to 300 pounds of cod, haddock, and yellowtail flounder on a fishing trip [? 648.82(b)(3)].

One of the following two monkfish possession for exempted multispecies vessels would be chosen by the Council before submitting the final amendment to the Department of Commerce:

- a) Possession of monkfish would be included within the existing 300 pound limit. In other words, no more than 300 pounds of cod, haddock, yellowtail flounder, or monkfish could be retained by these vessels on a fishing trip,

- or      b)      Possession of monkfish would be limited to 100 pounds tail weight or 332 pounds whole weight. In other words, these exempted multispecies vessels would be able to retain up to 300 pounds of cod, haddock, or yellowtail flounder; plus up to 100 pounds of monkfish tails or 332 pounds of whole monkfish.

#### **7.1.4.4.3.3      *Limited access fishery measures***

The limited access fishery would be managed by limiting the number of vessels that can land monkfish in excess of the trip limits and by restrictions on fishing time. The amount of time fishing for monkfish would be monitored via a call-in, VMS, or another certified method. A qualifying vessel can choose when to fish for monkfish under the days-at-sea program and the days absent from port would be deducted from each vessel's fleet allocation.

Limited access would be based on the vessel's historic participation from February 28, 1991 to February 27, 1995 [the monkfish control date]. They must comply with guidelines in control date notice to be eligible for qualification. Pre-qualification would be based on official weighout/dealer records. Vessels without sufficient landings in the official weighout/dealer data base would be allowed to certify other sources of supporting evidence during a verification period.

##### **7.1.4.4.3.3.1 Qualification criteria**

One of three methods (Table 68) would be chosen by the Councils to qualify vessels to participate in a monkfish-only fishery controlled by days-at-sea. One method [one pound of monkfish (in any form) on one or more trips] is non-preferred because it is expected to qualify too many vessels and allow a reasonable fleet allocation that meets the biological TAL objectives. Two qualification options based on historic participation from February 28, 1991 to February 27, 1995 are preferred for non-preferred alternative 4:

- A.      Documented monkfish landings exceeding 50,000 pounds tail weight
- B.      Documented landings that meet one of the following criteria:
  - a)      for vessels less than 51 gross registered tons, monkfish landings of at least 750 pounds tail weight or 2,490 pounds whole weight on 15 or more trips, or
  - b)      for any vessel, monkfish landings of at least 1,000 pounds tail weight or 3,320 pounds whole weight on 50 or more trips, or
  - c)      for any vessel, monkfish landings of at least 5,000 pounds tail weight or 16,600 pounds whole weight on 8 or more trips, or
  - d)      for any vessel, monkfish landings of at least 10,000 pounds tail weight or 33,200 pounds whole weight on 5 or more trips.

##### **7.1.4.4.3.3.2 Fleet days-at-sea allocations**

Limited access monkfish vessels would be allotted multispecies fleet days-at-sea to target and land only monkfish in fisheries that have been declared exempt from the groundfish regulations because of their low catch of regulated groundfish. These vessels would be required to use appropriate mesh and would not be allowed to retain other regulated species.

The TAL objectives for non-preferred alternative 4 are the same ones adopted by the Council for the other alternatives. The fleet days-at-sea allocations would be set a levels calculated to achieve landings equal to the target allocation of landings for the monkfish-only fishery. This target allocation of landings is determined by deducting the expected annual bycatch from the annual TAL objectives.

The TAL for the fishing year beginning July 1, 1996 is 5,500 mt whole weight in the NFMA and 8,500 mt in the SFMA. Based on historical landings, adjusted for the regulations already in place for multispecies, sea

scallops, and summer flounder and adjusted for the proposed non-preferred alternative 4 trip limits (Section 7.1.4.4.3.1), the Council anticipates the landings of monkfish from fisheries managed via trip limits to be 1,877 mt in the NFMA and 2,805 mt in the SFMA. This expected landings would leave 9,318 mt to be allocated to the limited access fishery in the fishing year beginning July 1, 1996 (Table 83). This allocation would not be further subdivided by management area, because the number of vessels would be determined by an area non-specific qualification criteria. Vessels in the limited access fishery will, therefore, be able to fish anywhere within U.S. waters for monkfish.

During the second year of management, beginning July 1, 1997, the annual target allocation for the limited access fishery would be determined by deducting the expected bycatch from the TALs for that year. The TAL objective for the second year would be 3,000 mt in the NFMA and 6,000 mt in the SFMA. The expected bycatch during the same time period is 1,560 mt and 2,493 mt, respectively (Table 83). This calculation would leave an allocation of 5,001 mt for the limited access fishery.

The limited access target allocation would remain constant at 5,001 mt each year through year seven (2001). Reductions in bycatch between fishing year 1998 and fishing year 2002 would contribute to reducing fishing mortality toward the overfishing definition threshold (Section 2.4.1.1).

Although it is difficult to anticipate all the changes in monkfish bycatch that might occur in other regulated fisheries over the next seven years, the TAL objective to meet the overfishing definition threshold mortality would be 2,148 mt in the NFMA and 4,927 mt in the SFMA. The expected bycatch for the same period is 1,467 mt in the NFMA and 1,984 mt in the SFMA, leaving 3,624 mt for the limited access fishery.

**Table 83.** Expected TAL allocations between the bycatch and directed monkfish fisheries for non-preferred alternative 4, with a 200 pound per day-at-sea bycatch allowance for vessels fishing during a multispecies or scallop day-at-sea. These estimates take into account the affect of the mortality reduction programs that have already taken place, or are scheduled to take place, according to the multispecies, sea scallop, and summer flounder FMPs. All results are expressed in metric tons of whole weight.

Year beginning July 1	Total allowable landings		Expected fishing mortality		Expected landings with trip limits and multispecies DAS		Target allocation, monkfish-only fishery
	Northern area	Southern area	Northern area	Southern area	Northern area	Southern area	
1991-1993					6,505	10,488	
1996	5,500	8,500	0.13	0.37	1,877	2,805	9,318
1997	3,000	6,000	0.07	0.26	1,560	2,439	5,001
1998	2,969	5,849	0.07	0.26	1,529	2,288	5,001
1999	2,969	5,849	0.07	0.26	1,529	2,288	5,001
2000	2,938	5,697	0.07	0.25	1,498	2,136	5,001
2001	2,907	5,545	0.07	0.24	1,467	1,984	5,001
2002	2,148	4,927	0.05	0.22	1,467	1,984	3,624

Similar calculations were performed using a 175-pound tail weight per day-at-sea trip limit to determine the target allocations under this condition. The annual expected landings from bycatch and the remaining target allocations for the limited access fishery are given in Table 84.

The monkfish landings histories of eligible limited access vessels under each qualification criteria option was analyzed to determine how many fleet days-at-sea could be allocated. The days-at-sea allocation depends on the number of qualifying vessels and the target annual allocation of monkfish landings.

**Table 84** Expected TAL allocations between the bycatch and directed monkfish fisheries for non-preferred alternative 4, with a **175 pound per day-at-sea bycatch allowance** for vessels fishing during a multispecies or scallop day-at-sea. These estimates take into account the affect of the mortality reduction programs that have already taken place, or are scheduled to take place, according to the multispecies, sea scallop, and summer flounder FMPs. All results are expressed in metric tons of whole weight.

Year beginning July 1	Total allowable landings		Expected fishing mortality		Expected landings with trip limits and multispecies DAS		Target allocation, monkfish-only fishery
	Northern area	Southern area	Northern area	Southern area	Northern area	Southern area	
1991-1993					6,505	10,488	
1996	5,500	8,500	0.13	0.37	1,647	2,498	9,854
1997	3,000	6,000	0.07	0.26	1,372	2,173	5,455
1998	2,969	5,849	0.07	0.26	1,346	2,038	5,455
1999	2,969	5,849	0.07	0.26	1,346	2,038	5,455
2000	2,938	5,697	0.07	0.25	1,320	1,903	5,455
2001	2,907	5,545	0.07	0.24	1,295	1,768	5,455
2002	2,148	4,927	0.05	0.22	1,295	1,768	4,012

Under qualification option 1 (one pound, one trip), there are 1871 vessels in the NMFS weightout data that meet this criterion. During the 4-year qualification period, these vessels landed an average of 19,110 mt per year. The total days on trips landing monkfish averaged 48 per vessel, but only 5 days per vessel for trips where monkfish contributed to more than 20 percent of the total landed revenue (Table 85). Only 255 out of the 1871 qualifying vessels had at least one trip where more than 20 percent of total landed revenue came from monkfish. Based on the landings history of these qualifying vessels, the Council would allocate 18 days-at-sea in the fishing year beginning May 1, 1996 and 7 days-at-sea in the fishing year beginning May 1, 1997. These days-at-sea limits are estimated to produce landings of 9,318 mt during 1996-1997 and 5,001 mt during 1997-1998 (Table 86).

Three hundred and sixteen (316) vessels would qualify under option 2, according to NMFS weighout data. During the 4-year qualification period, these vessels landed an average of 14,346 mt per year. The total days on trips landing monkfish averaged 132 per vessel, but only 22 days per vessel for trips where monkfish contributed to more than 20 percent of the total landed revenue (Table 85). Only 88 out of the 316 qualifying vessels had at least one trip where more than 20 percent of total landed revenue came from monkfish. Based on the landings history of these qualifying vessels, the Council would allocate 40 days-at-sea in the fishing year beginning May 1, 1996 and 13 days-at-sea in the fishing year beginning May 1, 1997. These days-at-sea limits are estimated to produce landings of 9,318 mt during 1996-1997 and 5,001 mt during 1997-1998 (Table 86).

One hundred and fourteen (114) vessels would qualify under option 3, according to NMFS weighout data. During the 4-year qualification period, these vessels landed an average of 7,418 mt per year. The total days on trips

landing monkfish averaged 131 per vessel, but only 37 days per vessel for trips where monkfish contributed to more than 20 percent of the total landed revenue (Table 85). Only 48 out of the 114 (42%) qualifying vessels had at least one trip where more than 20 percent of total landed revenue came from monkfish.

The target annual allocation of landings for this option is slightly higher than that for options 1 and 2. This occurs because the bycatch trip limits is lower and the landings from this fishing sector are correspondingly reduced. The target allocation of landings to the limited access fishery is therefore increased to 9,854 mt in the first year and 5,455 in the second. These allocations would allow the Council to allocate 200 days-at-sea in the fishing year beginning May 1, 1996 and 50 days-at-sea in the fishing year beginning May 1, 1997. Many of the limited access qualifiers, under this option do not have a history of targeting monkfish for 200 days per year. The average number of days for trips landing monkfish is 131. Even though the estimated monkfish landings by qualifiers do not exceed the target allocation in the first year, the Council would set a precautionary cap at 200 days. This precautionary regulation would prevent vessels from making back-to-back trips to intensively target monkfish.

**Table 85.** Non-preferred alternative 4: Days-at-sea allocations for any vessel that qualifies for a limited access monkfish permit based on historic participation.

	Number of vessels qualifying via NMFS weighout records	Base landings (mt)	Average DAS from 1991 to 1994		DAS allocations for each vessel	
			All vessels	Vessels with 20% or more revenue from monkfish	1996	1997 and beyond
Option 1 - One pound of monkfish on one or more trips	1871	19,110	48	5	18	7
Option 2 - Monkfish landings exceeding 50,000 pounds tail weight	316	14,346	132	22	40	13
Option 3 - 10,000 pounds tail weight on five or more trips, etc.	114	7,418	131	37	200	50

**Table 86.** Non-preferred alternative 4: Target landings and days-at-sea allocations for the monkfish-only fishery. These allocations for options 1 and 2 would require the bycatch trip limit to be 200 pounds tail-weight per day-at-sea. The allocations for option 3 would require a bycatch trip limit of 165 pounds tail-weight per day-at-sea.

	Number of vessels qualifying via NMFS weighout records	Target annual allocation (mt)		Annual allocation per vessel (pounds, tail weight)		DAS allocations for each vessel	
		1996	1997 and beyond	1996	1997 and beyond	1996	1997 and beyond
Option 1 - One pound of monkfish on one or more trips	1871	9,318	5,001	3,307	1,775	18	7
Option 2 - Monkfish landings exceeding 50,000 pounds tail weight	316	9,318	5,001	19,581	10,509	40	13
Option 3 - 10,000 pounds tail weight on five or more trips, etc.	114	9,318	5,001	54,277	29,131	200	50



#### 7.1.4.4.3.3.3 Closed seasons

Monkfish-only days-at-sea would be allotted to qualifying vessels only during July 1 to March 31, inclusive. No directed monkfish effort would, therefore, be allowed during April to June. This allocation of days is intended to allow more landings during the early winter season when prices, especially liver prices, are higher. The seasonal allocation would also be weighted to reduce monkfish landings during the spawning season (April to June), when monkfish are more vulnerable to exploitation.

#### 7.1.4.4.3.3.4 Closed season possession limits for monkfish limited access vessels.

Monkfish vessels would be regulated by a reduced trip limit when the monkfish limited access fishery was closed. Monkfish landings by these limited access vessels would continue to be counted against the quota, even though the cumulative monkfish landings to date already exceeded it. The additional monkfish landings by limited access vessels, even though controlled by a restrictive trip limit, would create a quota overage. NMFS would make adjustments in the following two fishing seasons, under the framework notice action procedure, to account for the previous overage.

The Council will choose a trip limit based on public comments for one of the two trip limit options: a) 100 pounds tail weight or 332 pounds whole weight, or b) 1,000 pounds tail weight or 3,320 pounds whole weight.

#### 7.1.4.4.3.3.5 Framework adjustments

Framework measures that are common to all three non-preferred alternatives (Sections 7.1.4.4.1, 7.1.4.4.2, and 7.1.4.4.3) could be adjusted to meet the monkfish TALs or other objectives. In addition to these frameworks, the following management measures within non-preferred alternative 4 could also be adjusted through framework action.

##### *7.1.4.4.3.3.5.1 Fleet days-at-sea allocations*

Fleet days-at-sea could be adjusted, up or down, to ensure that the biological objectives are not exceeded. Landings and catches would be compared to the respective TAL and TAC objectives for cod, haddock, yellowtail flounder, and monkfish together when days-at-sea adjustments are considered. The Council's intent, specifically regarding adjustments for monkfish, is to invoke a days-at-sea adjustment only when adjustments to other management measures cannot meet the biological objectives of the amendment.

##### *7.1.4.4.3.3.5.2 Number of gillnets per vessel*

If days-at-sea limits are ineffective in controlling gillnet effort on monkfish, the Council may place limits on the number of nets a monkfish-only vessel may fish. This limit would be based on the physical vessel characteristics that are defined in the vessel upgrading restrictions (Section 3.2.1.2) rather than on a vessel's history of net use. Basing the limitation on the vessel's physical characteristics will prevent the proliferation of gear and speculative increases in gear deployment in anticipation of future reward, since upgrading vessel characteristics is restricted.

#### 7.1.4.4.4 Other actions considered during scoping

##### 7.1.4.4.4.1 *Following scoping hearings*

Many alternatives, common to fisheries management throughout the world, were considered at the initial round of scoping hearings. Although management often uses these strategies in other fisheries, few scoping comments supported these approaches because of few data available at that time would allow the Councils to recommend a specific limit or because commenters felt the measures would be ineffective. As more information became available, especially the offshore extent of the resource and the total harvestable biomass, gear selectivity, stock/recruitment relationships, and current exploitation rates, some of the following alternatives were ultimately adopted by the Councils for inclusion in the preferred alternative. The measures listed below are included to document the breadth of strategies that the Councils considered during plan development. A brief summary of the various measures is given to indicate what the thoughts about the measures were at the time of the initial scoping hearings.

##### 7.1.4.4.4.1.1 Gear restrictions for directed fisheries

These measures have similar benefits as described for a minimum mesh size measure. Gear restrictions would be important in implementing some of the management measures such as effort control and minimum size limits. The morphology of monkfish complicates the implementation of minimum mesh sizes to achieve a minimum size (age) at first capture.

##### 7.1.4.4.4.1.2 Closed seasons

Monkfish are taken largely as a bycatch in the groundfish and scallop fisheries although directed effort appears to be increasing. It is likely that closed seasons would only be effective in controlling the directed portion of the fishery (the minority at this time). Landing prohibitions could be effective in reducing exploitation during periods of the year when the resource is concentrated (i.e., if spawning aggregations form) but would be less effective in the non-directed portion of the fishery, especially if discard mortality is high.

Although monkfish appear to be concentrated in certain areas during the spring and fall research surveys, insufficient information exists to justify prohibiting fishing for monkfish within certain seasons. Spawning is known to occur in May and June in areas south of Georges Bank and later in the year in the Gulf of Maine. Specific spawning aggregations, when monkfish might be more susceptible to capture, have not been observed and cannot be defined. Closed seasons, therefore, are not likely to be effective in controlling fishing mortality and protecting spawning activity unless they encompassed a very broad area and a long season. Because of the large proportion of monkfish landed as bycatch, such a broad closure would be very costly to fishermen fishing for other species.

##### 7.1.4.4.4.1.3 Closed areas

The pros and cons for closed areas are basically the same as those for closed seasons, but with one important difference. If an area is closed to the use of gears known to take monkfish, reductions in exploitation could result (because fishing is prohibited). Additional benefits would accrue in terms of yield if areas where small monkfish concentrate were closed to fishing.

The public commented during scoping hearings that this alternative would be preferable if areas that have high concentrations of small monkfish could be identified. Fishermen believed that they are able to avoid small fish when they occur. Unfortunately, these areas often change, can be relatively small, and cannot be predicted. Although this alternative is not currently a viable option, it may be effective in reducing mortality on small fish if seasonal aggregations of small, immature fish can be identified.

#### 7.1.4.4.1.4 Quotas

Quotas could take one of several forms. The most common form of quota management is an annual quota (referred to as Total Allowable Catch or TAC under the Magnuson Act), usually set to correspond to some target level of annual exploitation. Annual quotas can be effective in reducing exploitation only if all fishing ceases once the quota has been reached. If fishing is allowed to continue once the quota has been reached and discard mortality rates are high, then additional mortality may occur with no resultant economic return to the fishery. In addition, under open access conditions, annual quotas usually lead to derby type fisheries with their shortened fishing seasons and resultant economic inefficiencies. This can be further compounded if the number of vessels allowed to participate in the fishery is not restricted since the economic rent will be dispersed amongst a greater number of vessels.

Individual Transferable Quotas (ITQ's) are a relatively new management technique where a total quota is divided into small parts and allocated to individual participants. Individual quotas or shares could be bought, sold or leased so that harvesters have flexibility in planning their fishing activities. Potential advantages of ITQ's include increased profits, greater economic stability, improved product quality, improved safety, reduced gear conflicts and losses, elimination of the race for fish, bycatch reduction, an improved investment climate, reduction of market gluts, and reduction in post-harvest waste (Anderson 1992). Potential disadvantages of ITQ's include increased high-grading, under-reporting of catch, enforcement costs and problems, creation of a "rich mans club", changes in the makeup of the fishing fleet, and potential inequities of the initial allocation of quota shares (Anderson 1992).

There was almost no public support for quota management during scoping hearings, especially the total stock biomass cannot be currently estimated. Many felt that the above disadvantages greatly outweighed the potential benefits. In addition, the high proportion of landings occurring as a bycatch and the high discard mortality noted in preliminary studies would greatly diminish the potential management control over total mortality rates.

#### 7.1.4.4.1.5 Trip limits

Trip limits have been used as a tool to extend the fishing season in the US West Coast groundfish and the Atlantic large coastal shark fisheries. The primary purpose of these trip quotas is to slow the rate of landings to enable the fishery to operate year round. Significant discard mortality has been identified as a major problem with this management strategy (Pikitch et al. 1988). Trip limits could be effective if the goal of management is to limit directed effort and to maintain a bycatch fishery only.

The maximum amount of removals as a proportion of total harvestable biomass has not been defined because the offshore extent of the stock is unknown. Until this occurs or unless significant declines in biomass on the shelf edge are observed, there is considerable reluctance to limiting the directed fishery for monkfish to maintain a primarily bycatch fishery. Other fisheries in the northeastern US are facing severe management-imposed restrictions and the offshore monkfish resource could offer a viable alternative to these displaced fishermen. The primary objective of the preferred alternative is to improve yield per recruit and prevent overfishing on immature monkfish. Trip limits would do little to achieve these goals.

#### 7.1.4.4.1.6 Moratorium on vessels

Over-capitalization and excess harvesting capacity is now recognized as a major problem facing the US fishing industry (USDC 1991). As catch and effort restrictions are implemented through various management plans and their amendments, increased pressure on non-traditional species such as monkfish through a transfer of effort is likely to occur.

Quotas or limits on fishing effort are not currently being proposed within the FMP, and therefore no limits on entrants are needed to protect the effectiveness of those measures or to maintain profitability of existing participants in the monkfish fishery. Many public comments were made in favor of maintaining an open access fishery as an alternative to fishing for other regulated species that face severe management restrictions. The Council desires to maintain this alternative fishery without entry criteria by reducing the catch of small, immature monkfish.

#### 7.1.4.4.1.7 Effort restrictions

Another management tool used to control exploitation in other fisheries is to place limits on total effort of the fleet. Control may be accomplished through restrictions placed on the number of days-at-sea for individual vessels such that total effort equals the desired level (i.e., to achieve some prescribed level of fishing mortality). Effort controls have the advantage of reducing exploitation and maintaining a year round fishery without promoting discards. A disadvantage is that without control of entry into the fishery, individual effort would be restricted without controlling total effort exerted by the fleet. Monitoring and enforcement could also be difficult and expensive.

Presently, there are no precise exploitation goals or thresholds for monkfish. Coupled with the cost of implementing an effort monitoring system, unless fishing mortality can be estimated, there is no justification to limit total fishing effort.

#### 7.1.4.4.1.8 Special management zones

This technique has been suggested for management of species associated with reefs or other types of hard bottom. While not applicable to monkfish on a biological basis, special management zones could be incorporated into the management program to help ameliorate gear conflicts.

During 1992 and 1993, the Council coordinated a series of industry meetings to facilitate voluntary agreements among fishermen to reduce gear loss and conflict. As a result of these efforts, gear loss and conflicts have been reduced although some fishermen lost access to otherwise productive fishing grounds. By operating under the guidelines of a gear conflict resolution, these fishermen have avoided gear loss by fishing in certain areas and allowing other fishermen access to other grounds. The Councils are satisfied with the progress made in this framework, but other areas may need this attention. As a result of these efforts, the Councils are content with the progress and feel that management measures are not currently required to address these problems.

#### 7.1.4.4.1.9 Effort monitoring system

There is currently no management reason to monitor effort, either days-at-sea or days fished. Such a system is most often used to limit fishing time or to ensure compliance with closed areas as a way to reduce fishing mortality. These management measures have not been recommended, and therefore effort monitoring is unnecessary.

#### 7.1.4.4.1.10 List as a regulated species

Since monkfish are taken largely as a bycatch in the mixed species groundfish fishery, the species might be regulated through the Multispecies FMP. Initially monkfish could be handled in a manner similar to whiting with management measures deferred until more information is available concerning size/age composition of the landings, fishing mortality rates, etc.

The Council considered this alternative instead of developing a stand-alone FMP. Although many of the fishing vessels are regulated through their participation in the groundfish fishery, many landings occur as a bycatch to scalloping and from directed fishing effort with anchored gillnets. Some additional directed fishing effort for monkfish with otter trawls may be occurring by vessels who were excluded from groundfishing by Amendment #5 to the Multispecies FMP. Monkfish also range much further southward than many of the regulated groundfish species, raising the potential for vessels to be targeting monkfish who are not qualified under the Multispecies FMP moratorium.

These other fishing activities and the question of what management measures for groundfish would apply to directed fishing for monkfish made this alternative complicated and unworkable. Would the much larger groundfish fleet be allowed to direct additional fishing effort for monkfish? Would vessels that qualify for a permit via their historic catches of monkfish be then allowed to fish for groundfish? What management measures for groundfish would apply to monkfish? Should monkfish effort be reduced through restrictions on days-at-sea? The Councils' found these questions vexing and determined that monkfish management would be simplified and better administered under a separate FMP.

#### 7.1.4.4.2 *Management Options Considered During Development of this Amendment*

After the Groundfish PDT concluded that the initial draft Monkfish FMP would not prevent overfishing, the Councils undertook a comprehensive evaluation of all possible fishery management measures that could conceivably be used to manage monkfish. Initially, the Councils considered single management measures and assigned pros and cons to them based on the potential conservation benefits, effectiveness, and limitations of each

measure as they relate to the monkfish fishery. The following table summarizes the attributes of the management measures that were considered during this phase:

**Table 87.** Pros and cons of individual management measures for the monkfish fishery.

<b>Management measure</b>	<b>Conservation benefit or effectiveness</b>	<b>Limitations</b>
Mesh limits	<p>Improve yield per recruit.</p> <p>Allow spawning.</p> <p>Directly control age at entry.</p>	<p>Poor selectivity.</p> <p>Applicable only to directed fishery.</p> <p>High enforcement costs and potentially low compliance.</p>
Area closures	<p>Protection for small fish if areas can be identified.</p> <p>Protection for other species as well.</p>	<p>Shifts in effort occur.</p> <p>Monkfish are widely distributed.</p> <p>It would prevent fishing for other species not in need of protection.</p> <p>Areas would be difficult to identify and quantify.</p> <p>High enforcement costs.</p>
Quotas / Total Allowable Catch	<p>Directly controls fishing mortality.</p> <p>Easy to implement.</p> <p>Restricts displaced effort into monkfish fishery.</p> <p>Allows fishermen in other restricted fisheries to fish for monkfish.</p>	<p>Encourages more fishing.</p> <p>Inefficient harvesting and market policy.</p> <p>Negatively affects truly 'directed' fishermen.</p> <p>Causes increased discarding.</p> <p>High enforcement and monitoring costs.</p> <p>Potential for low compliance.</p> <p>May cause effort shifts into other fisheries.</p>
Individual Quotas	<p>Directly controls fishing mortality.</p> <p>Efficient harvesting and market strategy.</p> <p>Could match allowable catch with vessel capabilities.</p>	<p>Making initial allocations, defining criteria.</p> <p>May under-harvest full potential of the fishery.</p> <p>Costly to monitor and enforce.</p> <p>Increases discarding through high-grading.</p>
Individual Transferable Quotas	<p>Directly controls fishing mortality.</p> <p>Promotes efficiency.</p> <p>Allows fishermen to harvest the full potential of the fishery.</p>	<p>Making initial allocations, defining criteria.</p> <p>Costly to monitor and enforce.</p> <p>More costly to administer.</p> <p>Privatizes a public resource.</p> <p>Potential for market control and monopolization.</p>
Size Limits and liver landing limits	<p>Other existing restrictions provide some</p>	<p>No control over exploitation.</p>

<b>Management measure</b>	<b>Conservation benefit or effectiveness</b>	<b>Limitations</b>
(previous preferred alternative)	control.	Possible large effort shifts into monkfish fishery. Causes increased discarding. Implementation problems.
Days-at-sea limits to fish for monkfish.	Directly controls fishing mortality. Allows flexibility to fish for other species. Doesn't disrupt supply. Minimizes discarding. Could be applied by area.	Needs controls on fishing power. Need to limit new entrants to be effective. Defining qualifying criteria (everyone may qualify). May not achieve objectives. High monitoring and enforcement costs.
Trip Limits	Promotes a year-round fishery. Discourages increased directed effort. Allows by-catch fishery to continue.	Benefits small vessels while harming large vessels. Causes increased discarding via high-grading. Requires other management controls. High enforcement costs, potential for low compliance. Setting a trip limit to achieve target.

It was quickly apparent, when the Councils began developing a more comprehensive management strategy, that no one management measure would suffice. The fisheries that depend on monkfish have fishermen using different gears to land monkfish as a bycatch or as a targeted species. These fisheries also differed in broadly defined areas, due to existing fisheries and geographical associations with other species.

Any one measure, therefore, had negative consequences and compliance problems for one or more fisheries. During this initial evaluation, several combinations of measures were suggested that would effectively regulate one or more components of the monkfish fisheries. The Council also assigned pros and cons to the combined measures based on the potential conservation benefits, effectiveness, and limitations of each measure as they relate to the monkfish fishery. The following table summarizes the attributes of the combined management measures. Some of these combined measures, or variants of them, were included within the proposed management alternatives.

**Table 88.** Pros and cons of strategies or combinations of management measures for the monkfish fishery.

Management measure	Conservation benefit or effectiveness	Limitations
Directed fishery quota with limited access to a directed fishery, and a trip limit that takes effect after the directed fishery quota is filled.	<p>Easy to implement.</p> <p>Allows flexibility to fish for other species.</p> <p>Restricts displaced effort.</p>	<p>Inefficient harvesting and market policy.</p> <p>Encourages fishing.</p> <p>Negatively impacts truly 'directed' fishermen</p>
Individual Quotas with limited entry to directed fishery.	Same as individual quotas, but allows harvesting of full fishery potential.	Same as individual quotas, except lessens the potential under-harvesting of the resource.
Individual Quotas for directed fishery only, trip limits or other controls on by-catch	<p>Cost effective.</p> <p>Efficient harvest strategy.</p> <p>Less costly to monitor, ie fewer vessels to track quotas.</p>	<p>Costly to monitor.</p> <p>Causes increased discarding from trip limit.</p> <p>Making initial allocations, defining criteria.</p>
<p>Two area management, ie.</p> <p>a) Gulf of Maine and northern Georges Bank</p> <p>b) Southern Georges Bank, Southern New England, and the Mid-Atlantic</p>	Would not cause discarding of groundfish where it would be impossible to catch predominately monkfish.	Need to define and prevent overfishing in two areas which are not entirely distinct.
Existing days-at-sea or quota limits for by-catch/mixed fisheries combined with days-at-sea limits for directed/unregulated fishing for monkfish.	<p>Better minimizes discarding.</p> <p>Applies to mixed fisheries.</p> <p>Reduces administrative and enforcement costs.</p> <p>More effort reduction for monkfish than possible with separate regulations.</p> <p>Other benefits as described below.</p>	<p>Allocating days-at-sea for vessels with a history of directed fishing for monkfish.</p> <p>Benefits small vessels.</p> <p>Other limitations as described below.</p>
Existing days-at-sea or quota limits for by-catch/mixed fisheries combined with quotas for directed/unregulated fishing for monkfish.	<p>Reduces discarding.</p> <p>Reduces enforcement costs.</p> <p>Increases compliance.</p> <p>Less displaced effort from other regulated fisheries.</p> <p>Can meet objectives by relying on existing measures.</p> <p>Uses complimentary fishery management policies.</p> <p>Other benefits as described above.</p>	<p>May impact unrelated fisheries.</p> <p>May provide imprecise control over monkfish mortality.</p> <p>Other management controls may run counter to management goals for monkfish.</p> <p>Other limitations as described above.</p>

Management measure	Conservation benefit or effectiveness	Limitations
Existing days-at-sea or quota limits for by-catch/mixed fisheries combined with quotas for directed/unregulated fishing for monkfish, trip limits for incidental monkfish catch, and limited entry for a directed fishery.	May provide more precise control for monkfish.	<p>Causes increased discarding arising from a trip limit.</p> <p>Prevents directed fishing effort.</p> <p>Defining qualifying criteria.</p> <p>Would cause complicated regulations.</p>

#### 7.1.4.5 Alternatives outside the Councils' authority

Two types of economic incentives have the potential to reduce mortality or to induce changes in exploitation patterns through technological innovation. Both approaches require authority or funding that the Councils do not have.

##### 7.1.4.5.1 Vessel capacity reduction

Vessels that have a significant contribution to total monkfish mortality would be identified and eligible for a one-time grant or purchase if they relinquished all permits and rights to permits to fish in federal waters. If the program followed a similar procedure as the one used for the groundfish fishery, vessel owners would also transfer the deed to the vessel, allowing the government to scrap the vessel to prevent effort shifts into other unregulated fisheries.

The Councils rejected this approach for initial monkfish management action, because it requires a moratorium on new permits and controls on fishing. It would furthermore require authorization that the Council does not have. Once these controls are in place, it might be economically attractive to remove excess fishing capacity using this program to keep the FMP's management measures from getting too restrictive and causing the remaining vessels in the fleet from becoming uneconomic. A vessel capacity reduction program also provides economic relieve to fishermen that cannot economically continue in the fishery.

##### 7.1.4.5.2 Market based strategies

This alternative includes market based measures which would induce the landing of larger fish. These measures generally involve the allocation of federal funds or modifying the tax code to extract "resource rent". In this case, a "resource rent" might be structured to levy a tax on landings of small monkfish, commensurate with management objectives. The marginal profitability of catching small monkfish in excess of the management objective would be a disincentive to continue fishing on these fish.

Other combinations of financial incentives are possible, but any such proposal is outside the Councils' authority under the Act and would involve federal appropriations and establishing or changing excise taxes.