

NEW ENGLAND FISHERY MANAGEMENT COUNCIL

Multispecies (Monkfish) Committee

I. STATUS

1. Meetings: The Monkfish Committee has not met since the last Council meeting but is scheduled to meet October 3 in Warwick, RI.
2. Framework 4. The NEFMC approved final measures for Framework 4 at the November meeting, and the MAFMC did the same at its December meeting. NMFS published a proposed rule on March 20 for interim measures, stating that the agency intends to delay a decision on Framework 4 until the results of a stock assessment, scheduled for July, became available (see below). On April 27 NMFS published the interim rule, implementing Framework 4 proposed target catch levels (TACs), trip limits and days-at-sea for the Northern Management Area, as well as the other Framework 4 measures that the agency has determined would not result in any additional biological effects. The interim rule for the Southern Management Area adopted the current FY 2006 TAC, trip limits and days-at-sea allocations (12 DAS). The staff anticipates that by this Council meeting the agency will have announced its decision on Framework 4.
3. Stock Assessment – SAW 46: The Northeast Data Poor Stocks Working Group conducted the assessment using a new analytic model and using all available data, including that generated during the 2001 and 2004 cooperative surveys. The Stock Assessment Workshop accepted the assessment and recommends revising the biological reference points (see summary report). While under the current biomass reference points, both management units are overfished, under the revised reference points, both stock components are rebuilt. Also, while prior assessments could not reliably estimate fishing mortality (F), SAW 46 did accept the estimates of current F, which result in the conclusion that overfishing is not occurring on either component.
4. Framework 5. At this meeting, the Council will initiate a framework adjustment to implement revised management reference points based on the recommendations of SAW 46. Based on discussions among Monkfish Plan Development Team members, the staff anticipates that NMFS will inform the Council of some concerns and issues, mostly administrative in nature, that could be addressed in this framework adjustment, to take effect at the start of the 2008 fishing year. Staff expects this communication will be available prior to the Council meeting.

II. COUNCIL ACTION

1. Consider initiating a framework adjustment (Framework 5) to adopt new management reference points and address management program issues.

III. INFORMATION

1. Monkfish Assessment Summary for 2007
2. Correspondence



Monkfish Assessment Summary for 2007

by Northeast Data Poor Stocks Working Group

August 2007

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- 07-02 *Methodologies of the NOAA National Marine Fisheries Service Aerial Survey Program for Right Whales (*Eubalaena glacialis*) in the Northeast U.S., 1998-2006*, by TVN Cole, P Gerrior, and RL Merrick. January 2007.
- 07-03 *44th Northeast Regional Stock Assessment Workshop (44th SAW). 44th SAW Assessment Summary Report*. January 2007.
- 07-04 *Estimated Bycatch of Loggerhead Sea Turtles (*Caretta caretta*) in U.S. Mid-Atlantic Scallop Trawl Gear, 2004-2005, and in Sea Scallop Dredge Gear, 2005*, by KT Murray. February 2007.
- 07-05 *Mortality and Serious Injury Determinations for Baleen Whale Stocks Along the United States Eastern Seaboard and Adjacent Canadian Maritimes, 2001-2005*, by M Nelson, M Garron, RL Merrick, RM Pace III, and TVN Cole. February 2007.
- 07-06 *The 2005 Assessment of Acadian Redfish, *Sebastes fasciatus* Storer, in the Gulf of Maine/Georges Bank region*, by RK Mayo, JKT Brodziak, JM Burnett, ML Traver, and LA Col. April 2007.
- 07-07 *Evaluation of a Modified Scallop Dredge's Ability to Reduce the Likelihood of Damage to Loggerhead Sea Turtle Carcasses*, by HO Milliken, L Belskis, W DuPaul, J Gearhart, H Haas, J Mitchell, R Smolowitz, and W Teas. April 2007.
- 07-08 *Estimates of Cetacean and Pinniped Bycatch in the 2005 Northeast Sink Gillnet and Mid-Atlantic Coastal Gillnet Fisheries*, by D Belden. May 2007.
- 07-09 *The Analytic Component to the Standardized Bycatch Reporting Methodology Omnibus Amendment: Sampling Design, and Estimation of Precision and Accuracy (2nd Edition)*, by SE Wigley, PJ Rago, KA Sosebee, and DL Palka. May 2007.
- 07-10 *44th Northeast Regional Stock Assessment Workshop (44th SAW): 44th SAW assessment report*. May 2007.
- 07-11 *45th Northeast Regional Stock Assessment Workshop (45th SAW): 45th SAW Assessment Summary Report*. July 2007.
- 07-12 *Proposed Vessel Calibration Studies for NOAA Ship Henry B. Bigelow*, by NEFSC Vessel Calibration Working Group. August 2007.

Monkfish Assessment Summary for 2007

by Northeast Data Poor Stocks Working Group

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Northeast Fisheries Science Center Reference Documents

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Table of Contents

State of Stock	1
Projections	2
Catches	2
Stock Distribution and Identification	3
Data and Assessment	3
Biological Reference Points	4
Fishing Mortality	4
Recruitment	5
Stock Biomass	5
Special Comments	5
Sources of Information	6

Tables

Table 1. Catch and status table: monkfish	3
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Figures

Figure 1. Trends in NEFSC fall survey biomass indices of monkfish relative to existing biomass overfishing definitions, in the northern and southern management regions	7
Figure 2. Trends in total biomass and fishing mortality rate, from the assessment model, along with new biological reference points for monkfish from the 2007 assessment	8
Figure 3. Recruitment indices for monkfish from winter, spring, summer, and autumn NEFSC surveys for the northern and southern management regions	9
Figure 4. Body length of monkfish over time in the NEFSC autumn bottom trawl survey	10
Figure 5. Projection of total biomass to 2009 based on the Statistical Catch-At-Length model in the northern and southern management regions	11
Figure 6. Monkfish commercial fishery landings, by management region and total, 1964-2006	11
Figure 7. Monkfish commercial fishery landings by major gear type, northern and southern management regions	12

Monkfish Assessment Summary for 2007

State of Stock

Based on existing biomass reference points in the Monkfish Fishery Management Plan, the resource would be considered overfished in both the northern and southern stock management areas (Figure 1). In the northern area, the most recent biomass index, based on the 2004-2006 NEFSC fall survey 3-yr average, is 1.1 kg per tow. This is lower than the current $B_{\text{threshold}}$ value for the northern management area (1.30 kg/tow), and also lower than B_{target} (2.60 kg/tow). In the southern area, the most recent biomass index, based on the 2004-2006 NEFSC fall survey 3-yr average, is 0.87 kg per tow. This is lower than the $B_{\text{threshold}}$ (0.92 kg/tow) and B_{target} (1.84 kg/tow) for the southern area.

New reference points were developed as part of the 2007 assessment, based on a revised yield-per-recruit analysis (using a revised value of M) and results of a length-tuned model that incorporates multiple survey indices and catch data. Based on these new reference points, monkfish in both management regions are not overfished and overfishing is not occurring (Figure 2). New estimates of $B_{\text{threshold}}$ are 65,200 mt of total biomass in the north and 96,400 mt of total biomass in the south. Estimates of B_{target} are 92,200 mt in the north and 122,500 mt in the south. Estimates of total biomass for 2006 are 118,700 mt in the north and 135,500 mt in the south, both of which are greater than their respective biomass targets. The existing overfishing threshold is based on F_{max} , and this was retained, although new values were estimated. The new, updated estimates of F_{max} are 0.31 per year in the north and 0.40 per year in the south. Estimates of current F (2006) are 0.09 per year in the north and 0.12 per year in the south, both of which are lower than their respective overfishing thresholds.

The development of a new analytic model (“SCALE”) for monkfish is a significant advance. However, the new assessment results are accompanied by substantial uncertainty, and therefore need to be viewed with caution. Reservations stem from: (a) input uncertainties (under-reported landings and unknown discards during the 1980s and incomplete understanding of key biological parameters such as age and growth, longevity, natural mortality and stock structure); (b) the shorter assessment time frame (1980-2006) than in previous assessments (1963-2006); and (c) the relatively recent development of the assessment model. Compared to the previous monkfish assessment approach, the new model integrates more types of information and incorporates temporal variation in fishery selectivity patterns. It was not possible to utilize all sources of information with the previous approach. (See “Special Comments” section below.)

As indicated by NEFSC survey recruit abundance indices for approximate ages 1 and 2 (inferred from lengths, Figure 3), the frequency of better than average recruitment events increased since the late 1980s in the northern area. Relatively strong year classes were

produced in 1993, 1999 and 2001. In the south, recruitment has varied without trend during 1963-2006; however, a relatively strong 2001 year class is apparent in the south (Figure 3).

The median size of monkfish in both regions declined as landings increased in the 1980s (Figure 4). Maximum sizes have also declined, from about 110 cm during the 1960s to 90 cm since the early 1990s in the north, and from about 100 cm in the 1960s to 75 cm since the 1990s in the south.

Projections

The SCALE (Statistical Catch-at-Length) assessment model was used to evaluate the impacts of TACs proposed in Framework 4 (5,000 mt in the north and 5,100 mt in the south), assuming long-term average recruitment. The results indicate that total biomass in both regions would continue to increase through 2009 and remain above B_{target} (Figure 5). These results did not incorporate any uncertainty associated with the stock size estimates for 2006. Further work is necessary to develop a complete forecasting approach.

Catches

Reported total landings (live weight) increased from an annual average of 2,500 mt in the 1970s to 8,700 mt in the 1980s, 23,000 mt in the 1990s, and 22,000 mt during 2000-2005. Total landings in 2006 declined to 14,500 mt, the lowest level since 1990, due to management regulations (Figure 6). Landings in the early part of the time series are thought to be under-reported. The accuracy of landings data has likely improved with mandatory reporting, which began in 1994. In the northern area, landings peaked in 2003 (15,000 mt), and have since declined to 6,700 mt in 2006. In the southern area, landings peaked in 1998 (19,300 mt), and declined to 7,800 mt in 2006.

During 1990-1999, 53% of USA monkfish landings were taken in otter trawls, 28% in sea scallop dredges, and 18% in gillnets. During 2000-2006, 53% of USA monkfish landings were taken in otter trawls, 7% in sea scallop dredges, 35% in gillnets, and 6% other gear. While trawl gear accounts for most of the landings in the northern area (75% during 2000-2006, Figure 7), gillnets now account for the majority of the landings in the southern area (54% during 2000-2006, Figure 7).

Estimated total discards of monkfish have ranged between 1,600 mt (1992) and 7,500 mt (2001) per year, with a long-term discard/kept ratio of 0.15 (1989-2006, north and south combined). Discard rates have been highest in the sea scallop dredge fisheries in the southern area, particularly since 2000, and lowest in the gillnet fisheries. Discard ratios and discard levels (mt) increased in the southern area after 2000 (overall discard/kept ratio for 2001-2006 =0.34).

Table 1. Catch and status table (weights in '000 mt): monkfish.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Max ¹	Min ¹	Mean ¹
USA Commercial landings													
Northern area	9.7	7.3	9.1	10.7	13.3	14.0	15.0	13.2	10.3	6.7	15.0	3.2	8.0
Southern area	18.5	19.3	16.1	10.1	10.0	8.9	11.1	8.0	8.8	7.8	19.3	3.7	9.4
Total	28.2	26.6	25.2	20.9	23.3	22.9	26.1	21.2	19.1	14.5	28.2	7.3	17.4
USA Commercial discards													
Northern area	1.3	0.9	0.8	1.0	2.9	1.4	1.3	0.9	0.9	0.5	2.9	0.4	1.1
Southern area	1.2	1.1	1.2	1.5	4.6	3.4	3.2	2.7	2.5	1.8	4.6	0.6	2.1
Total	2.5	2.0	2.0	2.5	7.5	4.8	4.5	3.6	3.4	2.3	7.5	1.6	3.2
Foreign landings ²	0.2	0.2	0.2	0.2	0.1	0.3	0.3	-	-	-	0.3	0.1	0.5
Total Catch	30.9	28.8	27.4	23.6	30.9	28.0	30.9	24.7	22.5	16.7	31.0	16.7	25.5
Northern area													
Biomass index ³	0.67	0.97	0.83	2.50	2.07	2.32	2.72	0.63	1.62	1.04	5.6	0.6	2.1
Southern area													
Biomass index ³	0.59	0.50	0.30	0.48	0.71	1.32	0.83	0.97	0.80	0.83	7.0	0.3	1.5
Northern area													
Total Biomass ⁴	65.3	69.1	78.3	88.3	97.9	103.0	108.3	110.1	112.9	118.7	65.2	127.3	92.2
Fishing Mortality rate (F) ⁴	0.32	0.20	0.20	0.22	0.30	0.30	0.32	0.23	0.16	0.09	0.43	0.05	0.19
Southern area													
Total Biomass ⁴	100.2	98.4	96.4	99.8	107.4	112.6	120.1	124.3	130.0	135.5	96.4	152.7	122.6
Fishing Mortality rate (F) ⁴	0.37	0.36	0.29	0.19	0.23	0.19	0.20	0.15	0.15	0.12	0.37	0.04	0.16

¹ Landings data based on 1980-2006. Commercial fishery discard estimates not available before 1989; discard means from 1989-2006.

Biomass index time span is 1963-2006. Total biomass and F time span is 1980-2006.

² Foreign landings are for NAFO Areas 5 and 6. Foreign landings not available for 2004-2006.

³ NEFSC fall survey, stratified mean weight (kg) per tow.

⁴ Annual estimates from SCALE model ('000 mt for biomass).

Stock Distribution and Identification

The monkfish resource in US waters is distributed from the Gulf of Maine through Cape Hatteras, NC. Current management practice divides US waters into two regions north and south of Georges Bank to accommodate differences in fishery practices; however, there is no strong biological evidence (growth, maturity, and genetic information) of separate stocks.

Data and Assessment

Monkfish were last assessed at SAW-40 in November 2004. Data used in the current assessment include NEFSC research survey data, data from cooperative monkfish surveys conducted in 2001 and 2004, and commercial fishery data from (a) vessel trip reports, (b) dealer landings records, and (c) on-board fishery observers. The assessment assumed a natural

mortality rate (M) = 0.3; previous assessments used $M=0.2$. Fishing mortality rates were estimated from survey catch-per-tow-at-age from NEFSC research surveys, and using several length-based approaches (catch-survey analysis, statistical catch-at-length analysis (SCALE), length-based mortality, stage-based mortality). Although these methods were useful for exploratory data analysis, the only method deemed adequate for assessment was the SCALE model. The model could only be applied to the period from 1980 to the present, because the early (pre-1980) commercial catch data were too uncertain.

Biological Reference Points

Existing biological reference points (BRPs) for monkfish are from Framework 2 of the Fishery Management Plan for Monkfish (2003). For both management areas, the existing B_{target} was established as the median of the 3-year moving average of NEFSC fall survey biomass indices during 1965-1981. $F_{\text{threshold}}$ was set equal to F_{max} ($F=0.2$ per year). The Framework 2 overfishing definition did not include an F_{target} reference point.

New biomass reference points were developed as part of the new assessment, based on an updated age-based yield-per-recruit analysis, and results of the SCALE model, both of which assumed $M=0.3$ (previous assessments used $M=0.2$). The new B_{target} is the average of total biomass during the 1980 – 2006 period, estimated as 92,200 mt in the north and 122,500 mt in the south. The new $B_{\text{threshold}}$ is defined as the lowest value of total biomass in the assessment time series (1980 - 2006) from which the stock subsequently increased (termed “ B_{Loss} ”), estimated as 65,200 mt in the north and 96,400 mt in the south.

The existing overfishing threshold is based on F_{max} , and this was retained in the new assessment, although the value was updated. The revised estimates of F_{max} are 0.31 per year in the north and 0.40 per year in the south. The recommended F_{target} is F at 40% of maximum spawning potential ($F_{40\%}$), estimated to be 0.18 per year in the north and 0.31 per year in the south. $F_{40\%}$ was chosen to ensure some adequacy in spawning potential and because it has been used in managing other fisheries. The differences between areas in the $F_{40\%}$ estimates are due to different selectivity patterns of the predominant gears in the two regions (otter trawls in the north, large mesh gillnets in the south).

Monkfish is a data-poor species, and there are significant uncertainties associated with the assessment results. This should be considered when developing management measures.

Fishing Mortality

Previous assessment reviews (SAWs -31, -34 and -40) concluded that instantaneous fishing mortality rates (F) estimated from NEFSC research survey length frequency distributions were not sufficiently reliable to allow evaluation of current F with respect to reference points.

In the current assessment, fishing mortality in 2006, estimated using the SCALE assessment model (assuming $M=0.3$ per year), was $F=0.09$ per year in the north, and $F=0.12$ per year in the south. Fishing mortality has declined in both regions since 2003 (Figure 2).

Recruitment

Size-based indices of abundance indicate strong recruitment in the northern area in 1993, 1999 and 2001 (Figure 3). The strong recruitment in 1999 and 2001 led to rebuilding of stock biomass in the north. Recruitment has been stable in the south, with a strong year class produced in 2001 (Figure 3).

Stock Biomass

Total biomass in the northern region declined steadily from the early 1980s through the early 1990s, remained at a relatively low level during the 1990s, and then increased after 1999, reflecting strong recruitment and management efforts from 2000 onwards (Figure 2). Biomass in the north was estimated to be 118,700 mt in 2006. In the south, total biomass increased until the late 1980s and then declined during the 1990s. Since 2000, biomass has increased in the south, and was estimated to be 135,500 mt in 2006 (Figure 2).

Median body size of monkfish, in fall NEFSC bottom trawl surveys of the northern area, declined rapidly during the 1980s, but since 1990, has stabilized at a relatively small body size (20-40 cm recently, compared to 60-80 cm before 1982) (Figure 4). Maximum size has also declined, from approximately 100-120 cm to 80-100 cm. In the southern area, median size has been more variable, but shows a gradual decline over time (Figure 4), and maximum size has declined from around 100 cm before 1982 to 60-80 cm since 1990.

Special Comments

This assessment is uncertain for a number of reasons, including poor quality of some data and uncertainties in life history parameters. The assessment hinges critically on assumptions regarding growth, longevity, and natural mortality of monkfish, all of which are poorly known. In addition, commercial catches prior to 1993 are not well characterized. Model results are sensitive to the assumed value of natural mortality, revised in this assessment from 0.2 to 0.3 per year. This decision was based on the observed longevity of male and female fish in the resource; however, the actual lifespan of monkfish may be greater than that which has been thus far observed. Uncertainties in key life history parameters and historical catches are unlikely to be resolved in the short term.

In developing management alternatives, it should be recognized that monkfish is a “data-poor” species and this assessment has significant uncertainty. Landings on the order of 5,000 mt in

each management area (roughly the proposed TACs in FMP Framework Adjustment 4) are unlikely to result in a change in stock status, and should allow monkfish resources in both regions to increase.

The SCALE model used for assessment could only be applied to the period from 1980 to the present. Monkfish biomass indices in NEFSC surveys were approximately twice as high prior to 1980 than after this time. As such, the productivity of the resource may be higher than reflected in this assessment and thus, the possibility of attaining higher biomass levels in the future should not be discounted. Reconsideration of the newly proposed biomass reference points might thus be justified in the future.

Sources of Information

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NEFSC. 2005. 40th Northeast Regional Stock Assessment Workshop (40th SAW) Assessment Report. NEFSC Ref Doc. 05-04; 146 p.

Figure 1. Trends in NEFSC fall survey biomass indices (3-year moving average) of monkfish relative to existing biomass overfishing definitions, in the northern and southern management regions.

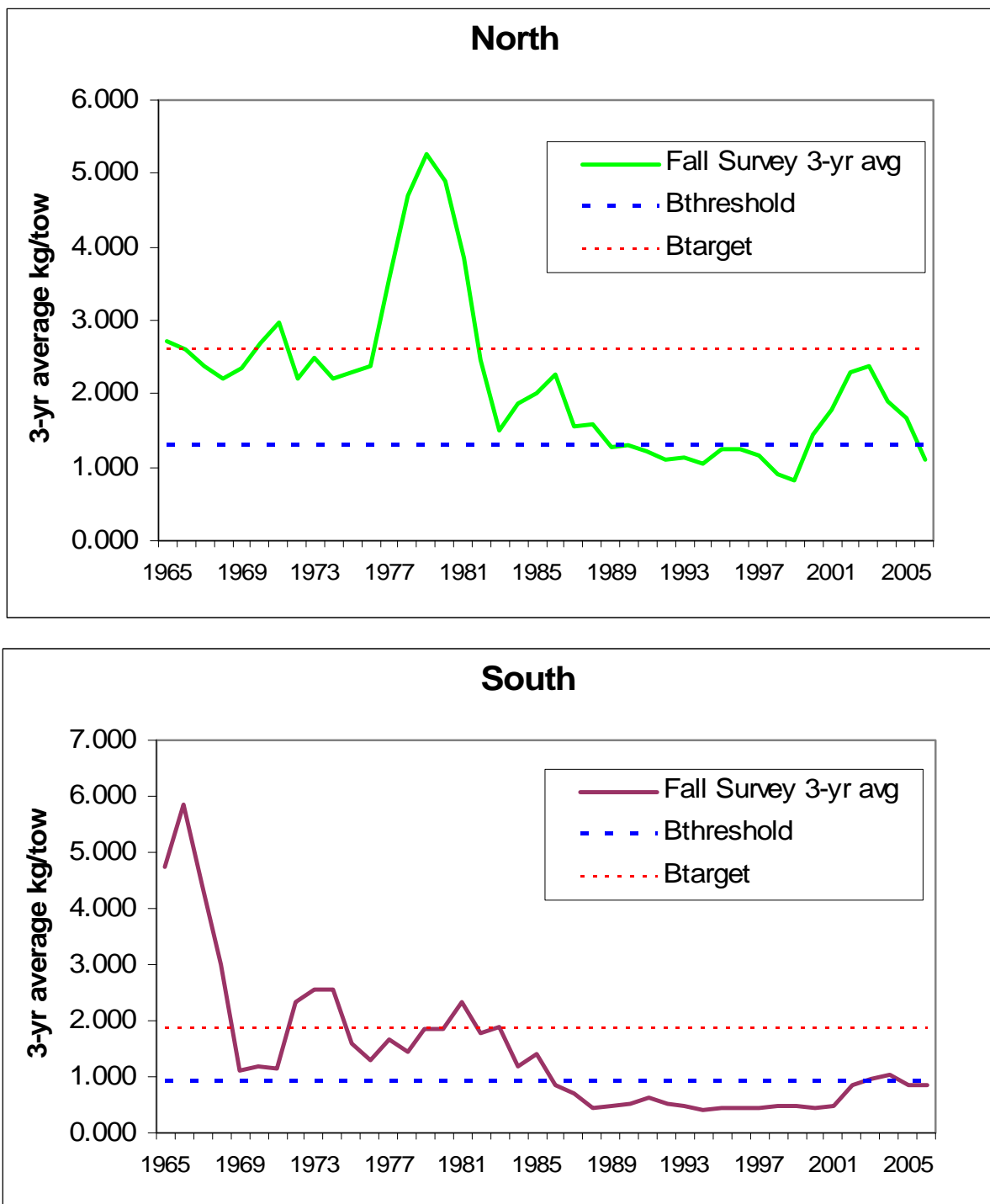


Figure 2. Trends in total biomass and fishing mortality rate (F), from the assessment model (SCALE), along with new (proposed) biological reference points for monkfish from the 2007 assessment. (A) northern management region, (B) southern management region.

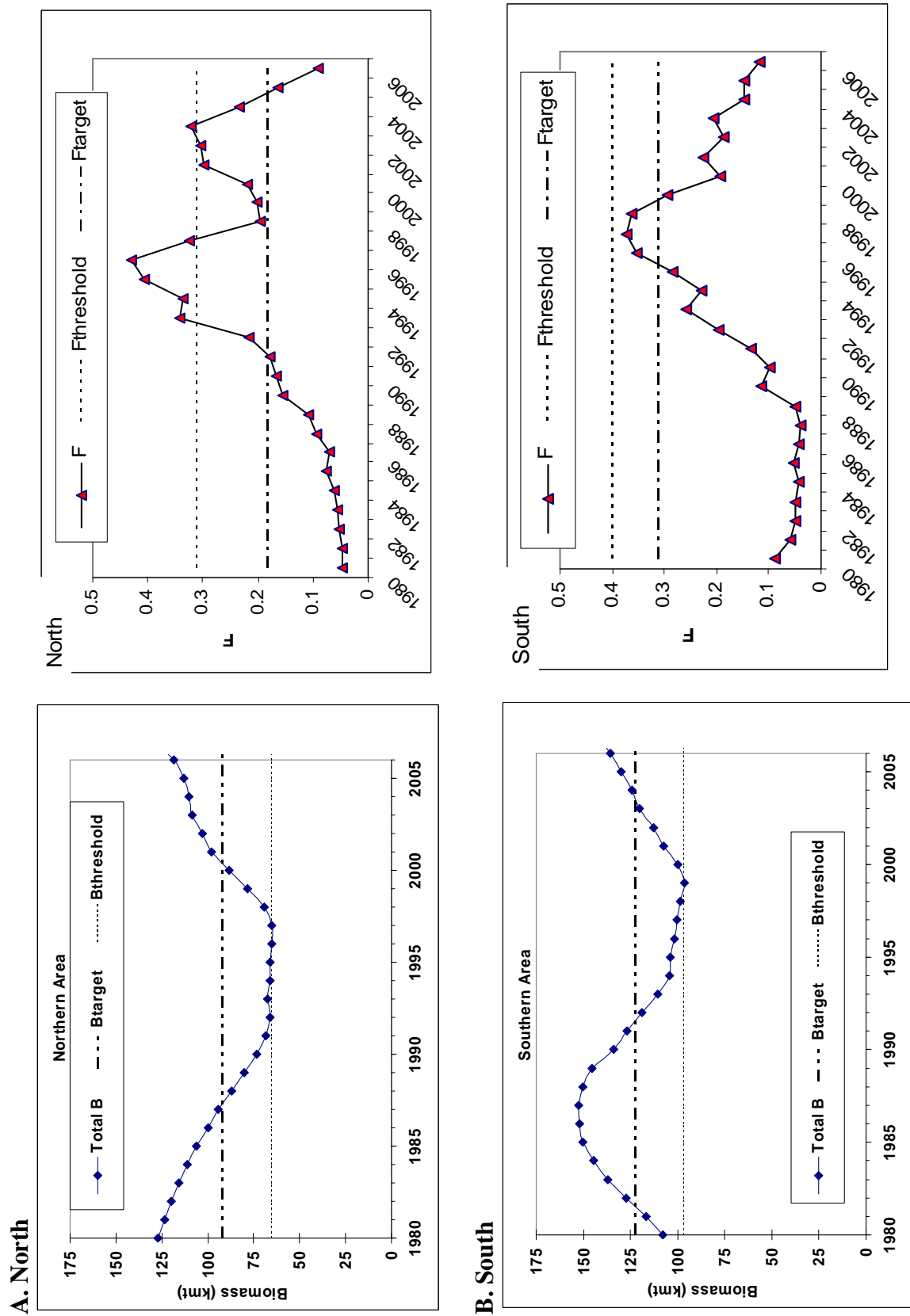


Figure 3. Recruitment indices (stratified mean number per tow) for monkfish from winter, spring, summer (shrimp, scallop), and autumn NEFSC surveys for the northern and southern management regions.

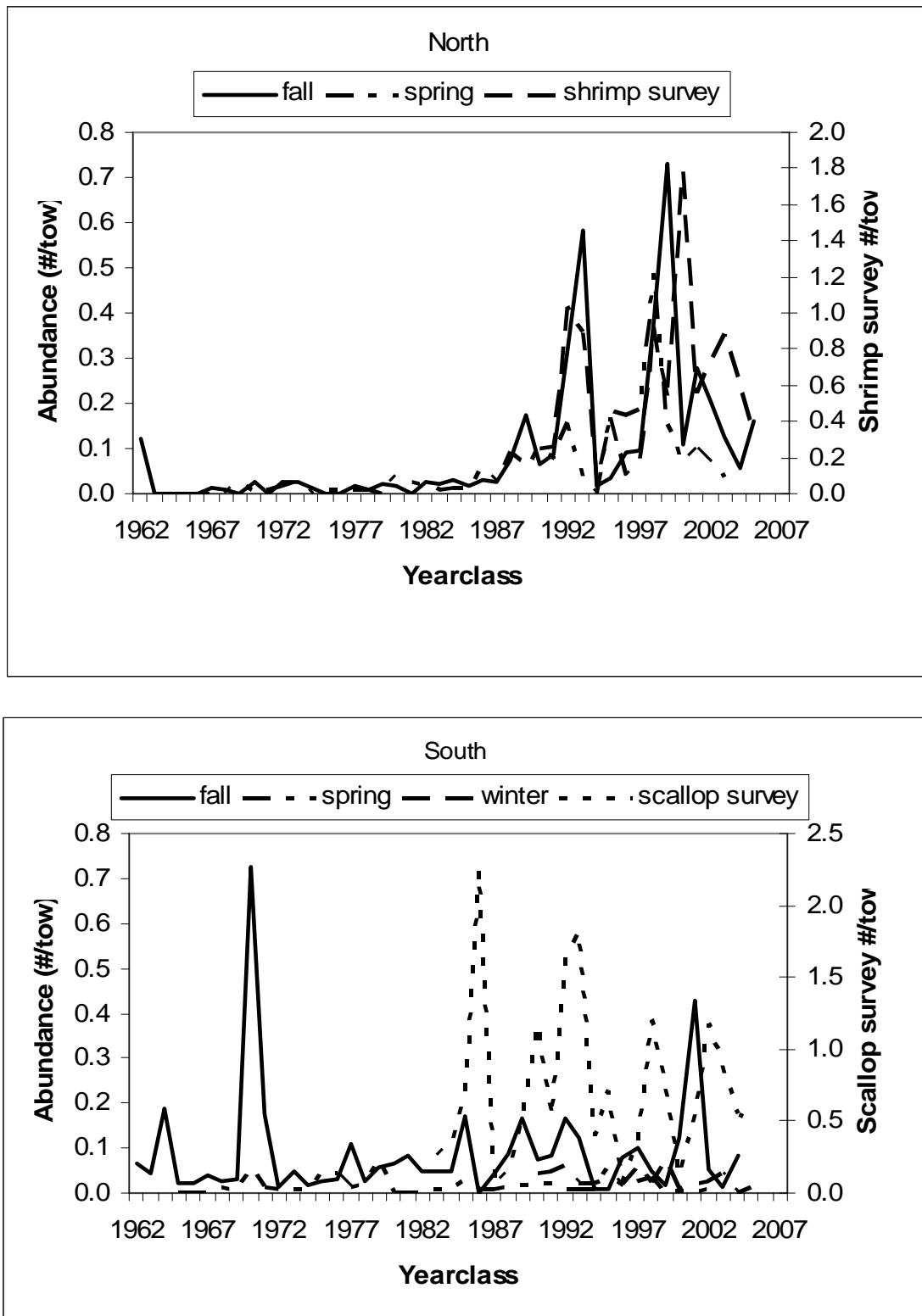
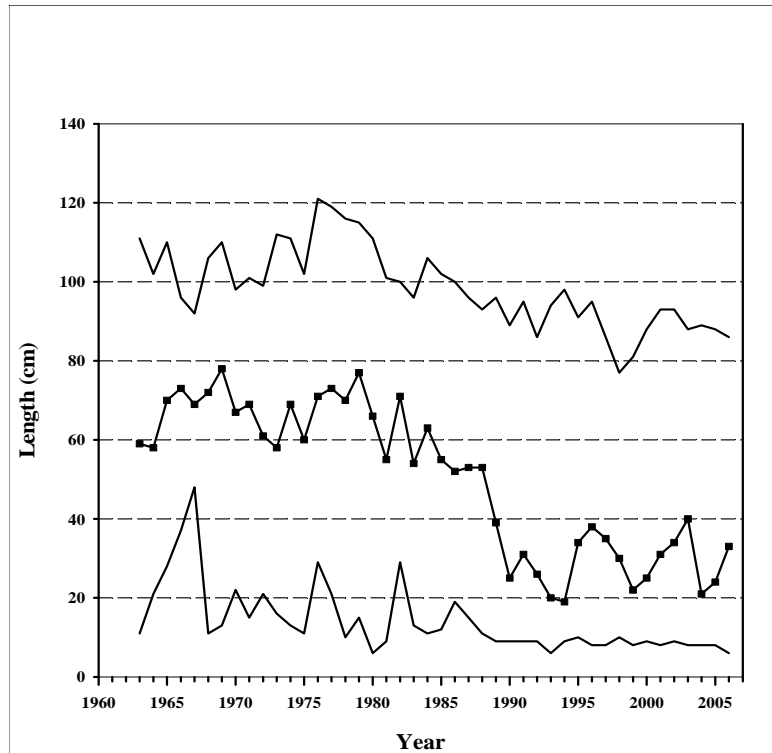


Figure 4. Body length of monkfish (minimum, median, maximum) over time in the NEFSC autumn bottom trawl survey. (A) northern management region and (B) southern management region.

A.



B.

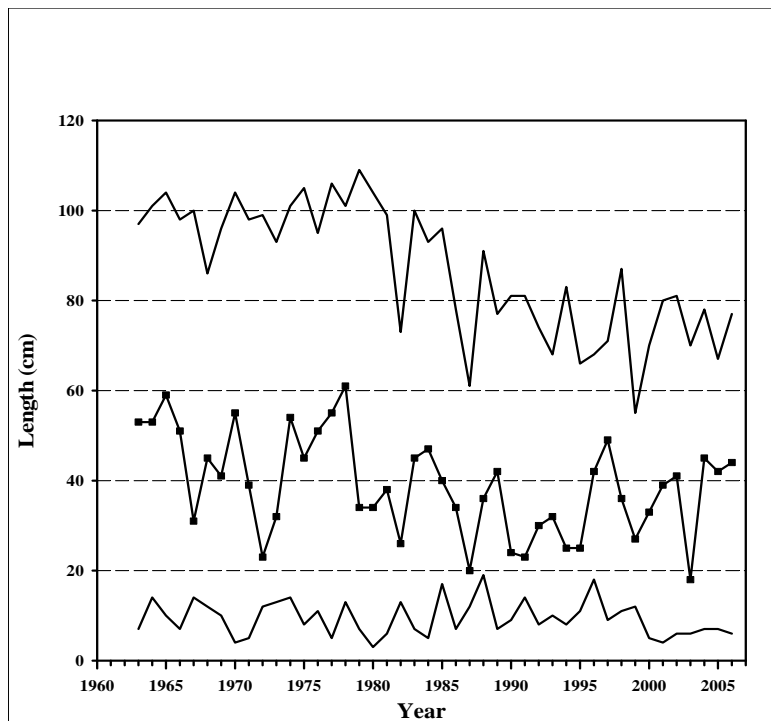


Figure 5. Projection of total biomass to 2009 based on the Statistical Catch-At-Length (SCALE) model in the northern and southern management regions.

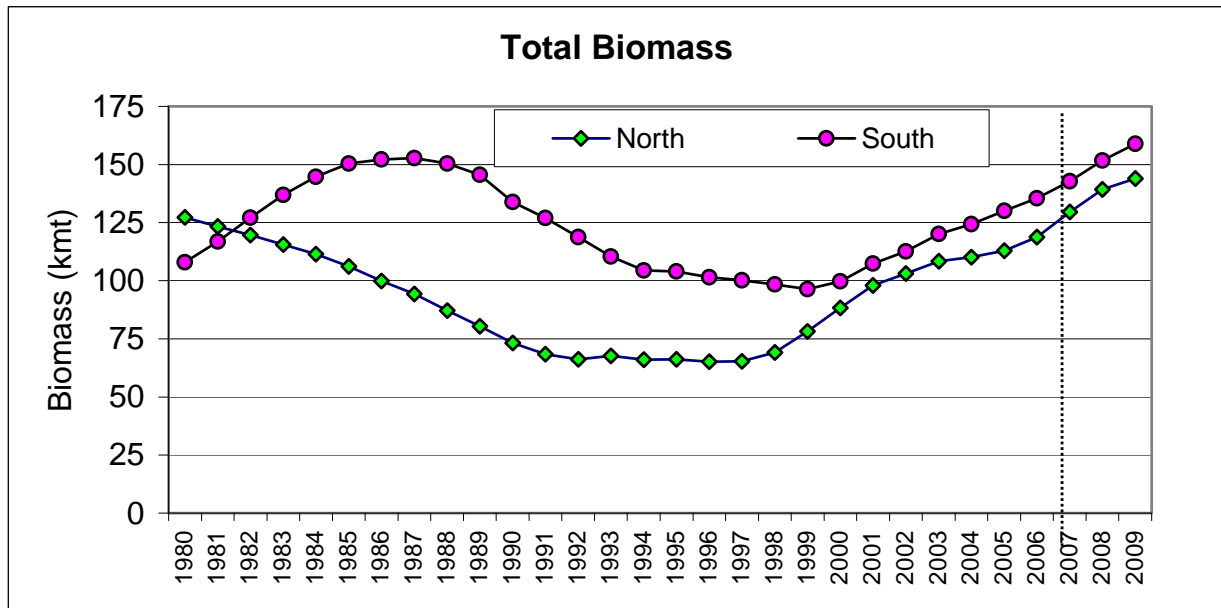


Figure 6. Monkfish commercial fishery landings, by management region and total, 1964-2006.

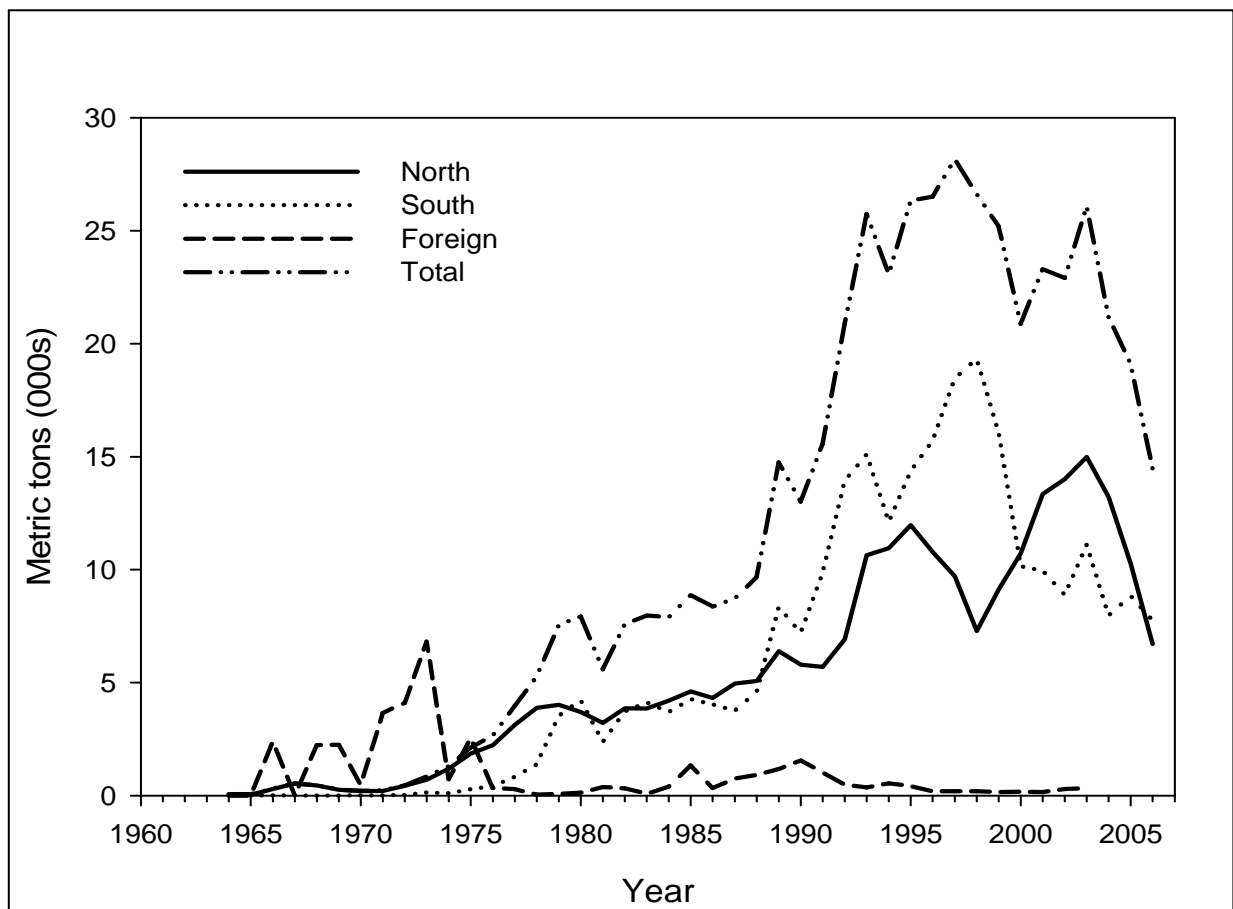
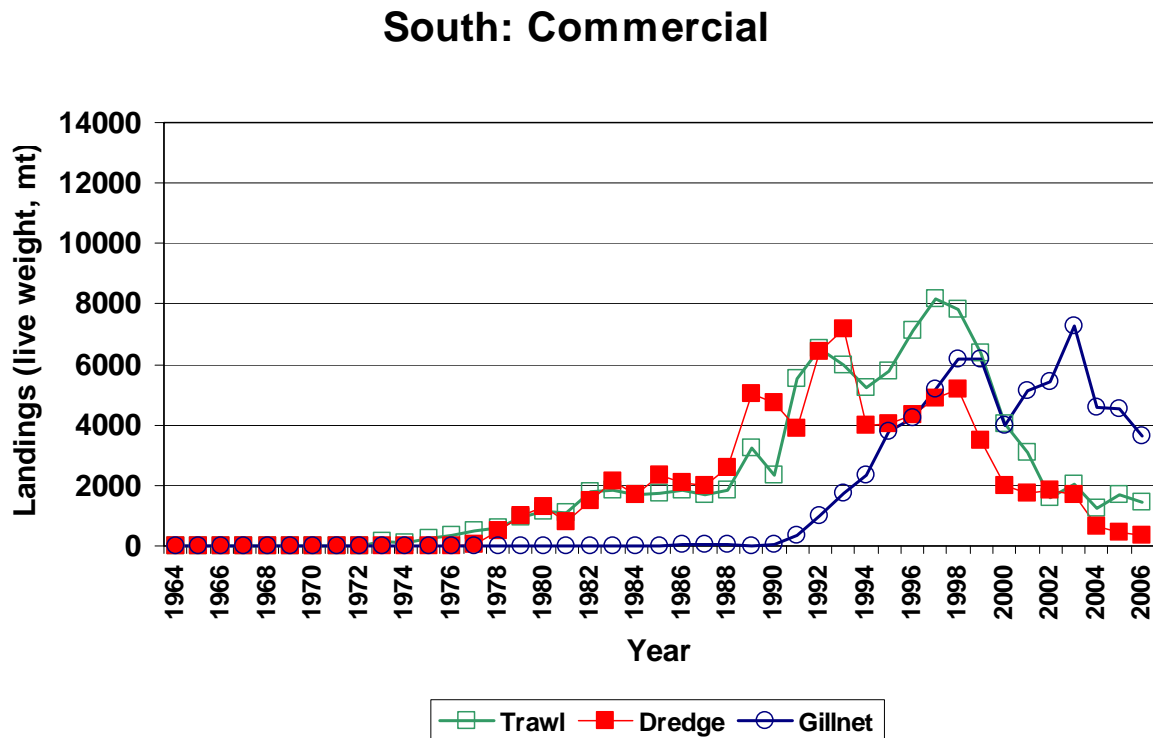
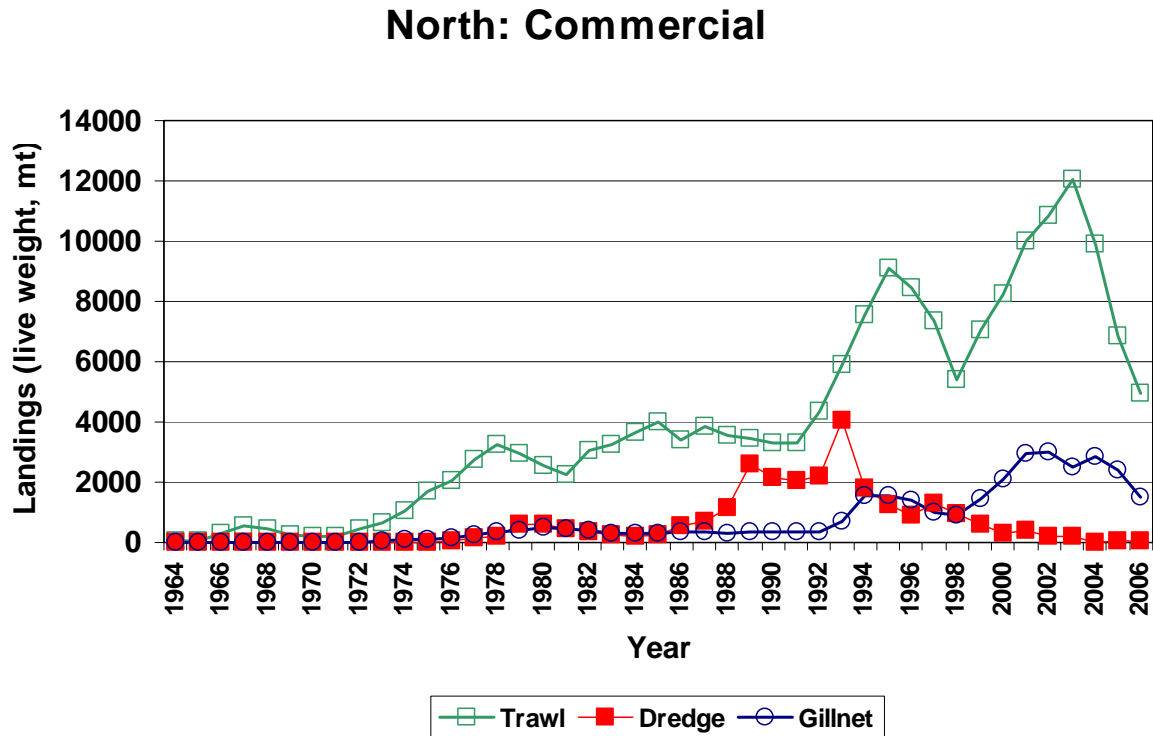


Figure 7. Monkfish commercial fishery landings by major gear type, northern and southern management regions.



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Monkfish Assessment Summary for 2007

by Northeast Data Poor Stocks Working Group

August 2007

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Monkfish Assessment Summary for 2007

by Northeast Data Poor Stocks Working Group

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Table of Contents

State of Stock	1
Projections	2
Catches	2
Stock Distribution and Identification	3
Data and Assessment	3
Biological Reference Points	4
Fishing Mortality	4
Recruitment	5
Stock Biomass	5
Special Comments	5
Sources of Information	6

Tables

Table 1. Catch and status table: monkfish	3
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Figures

Figure 1. Trends in NEFSC fall survey biomass indices of monkfish relative to existing biomass overfishing definitions, in the northern and southern management regions	7
Figure 2. Trends in total biomass and fishing mortality rate, from the assessment model, along with new biological reference points for monkfish from the 2007 assessment	8
Figure 3. Recruitment indices for monkfish from winter, spring, summer, and autumn NEFSC surveys for the northern and southern management regions	9
Figure 4. Body length of monkfish over time in the NEFSC autumn bottom trawl survey	10
Figure 5. Projection of total biomass to 2009 based on the Statistical Catch-At-Length model in the northern and southern management regions	11
Figure 6. Monkfish commercial fishery landings, by management region and total, 1964-2006	11
Figure 7. Monkfish commercial fishery landings by major gear type, northern and southern management regions	12

Monkfish Assessment Summary for 2007

State of Stock

Based on existing biomass reference points in the Monkfish Fishery Management Plan, the resource would be considered overfished in both the northern and southern stock management areas (Figure 1). In the northern area, the most recent biomass index, based on the 2004-2006 NEFSC fall survey 3-yr average, is 1.1 kg per tow. This is lower than the current $B_{\text{threshold}}$ value for the northern management area (1.30 kg/tow), and also lower than B_{target} (2.60 kg/tow). In the southern area, the most recent biomass index, based on the 2004-2006 NEFSC fall survey 3-yr average, is 0.87 kg per tow. This is lower than the $B_{\text{threshold}}$ (0.92 kg/tow) and B_{target} (1.84 kg/tow) for the southern area.

New reference points were developed as part of the 2007 assessment, based on a revised yield-per-recruit analysis (using a revised value of M) and results of a length-tuned model that incorporates multiple survey indices and catch data. Based on these new reference points, monkfish in both management regions are not overfished and overfishing is not occurring (Figure 2). New estimates of $B_{\text{threshold}}$ are 65,200 mt of total biomass in the north and 96,400 mt of total biomass in the south. Estimates of B_{target} are 92,200 mt in the north and 122,500 mt in the south. Estimates of total biomass for 2006 are 118,700 mt in the north and 135,500 mt in the south, both of which are greater than their respective biomass targets. The existing overfishing threshold is based on F_{max} , and this was retained, although new values were estimated. The new, updated estimates of F_{max} are 0.31 per year in the north and 0.40 per year in the south. Estimates of current F (2006) are 0.09 per year in the north and 0.12 per year in the south, both of which are lower than their respective overfishing thresholds.

The development of a new analytic model (“SCALE”) for monkfish is a significant advance. However, the new assessment results are accompanied by substantial uncertainty, and therefore need to be viewed with caution. Reservations stem from: (a) input uncertainties (under-reported landings and unknown discards during the 1980s and incomplete understanding of key biological parameters such as age and growth, longevity, natural mortality and stock structure); (b) the shorter assessment time frame (1980-2006) than in previous assessments (1963-2006); and (c) the relatively recent development of the assessment model. Compared to the previous monkfish assessment approach, the new model integrates more types of information and incorporates temporal variation in fishery selectivity patterns. It was not possible to utilize all sources of information with the previous approach. (See “Special Comments” section below.)

As indicated by NEFSC survey recruit abundance indices for approximate ages 1 and 2 (inferred from lengths, Figure 3), the frequency of better than average recruitment events increased since the late 1980s in the northern area. Relatively strong year classes were

produced in 1993, 1999 and 2001. In the south, recruitment has varied without trend during 1963-2006; however, a relatively strong 2001 year class is apparent in the south (Figure 3).

The median size of monkfish in both regions declined as landings increased in the 1980s (Figure 4). Maximum sizes have also declined, from about 110 cm during the 1960s to 90 cm since the early 1990s in the north, and from about 100 cm in the 1960s to 75 cm since the 1990s in the south.

Projections

The SCALE (Statistical Catch-at-Length) assessment model was used to evaluate the impacts of TACs proposed in Framework 4 (5,000 mt in the north and 5,100 mt in the south), assuming long-term average recruitment. The results indicate that total biomass in both regions would continue to increase through 2009 and remain above B_{target} (Figure 5). These results did not incorporate any uncertainty associated with the stock size estimates for 2006. Further work is necessary to develop a complete forecasting approach.

Catches

Reported total landings (live weight) increased from an annual average of 2,500 mt in the 1970s to 8,700 mt in the 1980s, 23,000 mt in the 1990s, and 22,000 mt during 2000-2005. Total landings in 2006 declined to 14,500 mt, the lowest level since 1990, due to management regulations (Figure 6). Landings in the early part of the time series are thought to be under-reported. The accuracy of landings data has likely improved with mandatory reporting, which began in 1994. In the northern area, landings peaked in 2003 (15,000 mt), and have since declined to 6,700 mt in 2006. In the southern area, landings peaked in 1998 (19,300 mt), and declined to 7,800 mt in 2006.

During 1990-1999, 53% of USA monkfish landings were taken in otter trawls, 28% in sea scallop dredges, and 18% in gillnets. During 2000-2006, 53% of USA monkfish landings were taken in otter trawls, 7% in sea scallop dredges, 35% in gillnets, and 6% other gear. While trawl gear accounts for most of the landings in the northern area (75% during 2000-2006, Figure 7), gillnets now account for the majority of the landings in the southern area (54% during 2000-2006, Figure 7).

Estimated total discards of monkfish have ranged between 1,600 mt (1992) and 7,500 mt (2001) per year, with a long-term discard/kept ratio of 0.15 (1989-2006, north and south combined). Discard rates have been highest in the sea scallop dredge fisheries in the southern area, particularly since 2000, and lowest in the gillnet fisheries. Discard ratios and discard levels (mt) increased in the southern area after 2000 (overall discard/kept ratio for 2001-2006 = 0.34).

Table 1. Catch and status table (weights in '000 mt): monkfish.

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Max ¹	Min ¹	Mean ¹
USA Commercial landings													
Northern area	9.7	7.3	9.1	10.7	13.3	14.0	15.0	13.2	10.3	6.7	15.0	3.2	8.0
Southern area	18.5	19.3	16.1	10.1	10.0	8.9	11.1	8.0	8.8	7.8	19.3	3.7	9.4
Total	28.2	26.6	25.2	20.9	23.3	22.9	26.1	21.2	19.1	14.5	28.2	7.3	17.4
USA Commercial discards													
Northern area	1.3	0.9	0.8	1.0	2.9	1.4	1.3	0.9	0.9	0.5	2.9	0.4	1.1
Southern area	1.2	1.1	1.2	1.5	4.6	3.4	3.2	2.7	2.5	1.8	4.6	0.6	2.1
Total	2.5	2.0	2.0	2.5	7.5	4.8	4.5	3.6	3.4	2.3	7.5	1.6	3.2
Foreign landings ²	0.2	0.2	0.2	0.2	0.1	0.3	0.3	-	-	-	0.3	0.1	0.5
Total Catch	30.9	28.8	27.4	23.6	30.9	28.0	30.9	24.7	22.5	16.7	31.0	16.7	25.5
Northern area													
Biomass index ³	0.67	0.97	0.83	2.50	2.07	2.32	2.72	0.63	1.62	1.04	5.6	0.6	2.1
Southern area													
Biomass index ³	0.59	0.50	0.30	0.48	0.71	1.32	0.83	0.97	0.80	0.83	7.0	0.3	1.5
Northern area													
Total Biomass ⁴	65.3	69.1	78.3	88.3	97.9	103.0	108.3	110.1	112.9	118.7	65.2	127.3	92.2
Fishing Mortality rate (F) ⁴	0.32	0.20	0.20	0.22	0.30	0.30	0.32	0.23	0.16	0.09	0.43	0.05	0.19
Southern area													
Total Biomass ⁴	100.2	98.4	96.4	99.8	107.4	112.6	120.1	124.3	130.0	135.5	96.4	152.7	122.6
Fishing Mortality rate (F) ⁴	0.37	0.36	0.29	0.19	0.23	0.19	0.20	0.15	0.15	0.12	0.37	0.04	0.16

¹ Landings data based on 1980-2006. Commercial fishery discard estimates not available before 1989; discard means from 1989-2006.

Biomass index time span is 1963-2006. Total biomass and F time span is 1980-2006.

² Foreign landings are for NAFO Areas 5 and 6. Foreign landings not available for 2004-2006.

³ NEFSC fall survey, stratified mean weight (kg) per tow.

⁴ Annual estimates from SCALE model ('000 mt for biomass).

Stock Distribution and Identification

The monkfish resource in US waters is distributed from the Gulf of Maine through Cape Hatteras, NC. Current management practice divides US waters into two regions north and south of Georges Bank to accommodate differences in fishery practices; however, there is no strong biological evidence (growth, maturity, and genetic information) of separate stocks.

Data and Assessment

Monkfish were last assessed at SAW-40 in November 2004. Data used in the current assessment include NEFSC research survey data, data from cooperative monkfish surveys conducted in 2001 and 2004, and commercial fishery data from (a) vessel trip reports, (b) dealer landings records, and (c) on-board fishery observers. The assessment assumed a natural

mortality rate (M) = 0.3; previous assessments used $M=0.2$. Fishing mortality rates were estimated from survey catch-per-tow-at-age from NEFSC research surveys, and using several length-based approaches (catch-survey analysis, statistical catch-at-length analysis (SCALE), length-based mortality, stage-based mortality). Although these methods were useful for exploratory data analysis, the only method deemed adequate for assessment was the SCALE model. The model could only be applied to the period from 1980 to the present, because the early (pre-1980) commercial catch data were too uncertain.

Biological Reference Points

Existing biological reference points (BRPs) for monkfish are from Framework 2 of the Fishery Management Plan for Monkfish (2003). For both management areas, the existing B_{target} was established as the median of the 3-year moving average of NEFSC fall survey biomass indices during 1965-1981. $F_{\text{threshold}}$ was set equal to F_{max} ($F=0.2$ per year). The Framework 2 overfishing definition did not include an F_{target} reference point.

New biomass reference points were developed as part of the new assessment, based on an updated age-based yield-per-recruit analysis, and results of the SCALE model, both of which assumed $M=0.3$ (previous assessments used $M=0.2$). The new B_{target} is the average of total biomass during the 1980 – 2006 period, estimated as 92,200 mt in the north and 122,500 mt in the south. The new $B_{\text{threshold}}$ is defined as the lowest value of total biomass in the assessment time series (1980 - 2006) from which the stock subsequently increased (termed “ B_{Loss} ”), estimated as 65,200 mt in the north and 96,400 mt in the south.

The existing overfishing threshold is based on F_{max} , and this was retained in the new assessment, although the value was updated. The revised estimates of F_{max} are 0.31 per year in the north and 0.40 per year in the south. The recommended F_{target} is F at 40% of maximum spawning potential ($F_{40\%}$), estimated to be 0.18 per year in the north and 0.31 per year in the south. $F_{40\%}$ was chosen to ensure some adequacy in spawning potential and because it has been used in managing other fisheries. The differences between areas in the $F_{40\%}$ estimates are due to different selectivity patterns of the predominant gears in the two regions (otter trawls in the north, large mesh gillnets in the south).

Monkfish is a data-poor species, and there are significant uncertainties associated with the assessment results. This should be considered when developing management measures.

Fishing Mortality

Previous assessment reviews (SAWs -31, -34 and -40) concluded that instantaneous fishing mortality rates (F) estimated from NEFSC research survey length frequency distributions were not sufficiently reliable to allow evaluation of current F with respect to reference points.

In the current assessment, fishing mortality in 2006, estimated using the SCALE assessment model (assuming $M=0.3$ per year), was $F=0.09$ per year in the north, and $F=0.12$ per year in the south. Fishing mortality has declined in both regions since 2003 (Figure 2).

Recruitment

Size-based indices of abundance indicate strong recruitment in the northern area in 1993, 1999 and 2001 (Figure 3). The strong recruitment in 1999 and 2001 led to rebuilding of stock biomass in the north. Recruitment has been stable in the south, with a strong year class produced in 2001 (Figure 3).

Stock Biomass

Total biomass in the northern region declined steadily from the early 1980s through the early 1990s, remained at a relatively low level during the 1990s, and then increased after 1999, reflecting strong recruitment and management efforts from 2000 onwards (Figure 2). Biomass in the north was estimated to be 118,700 mt in 2006. In the south, total biomass increased until the late 1980s and then declined during the 1990s. Since 2000, biomass has increased in the south, and was estimated to be 135,500 mt in 2006 (Figure 2).

Median body size of monkfish, in fall NEFSC bottom trawl surveys of the northern area, declined rapidly during the 1980s, but since 1990, has stabilized at a relatively small body size (20-40 cm recently, compared to 60-80 cm before 1982) (Figure 4). Maximum size has also declined, from approximately 100-120 cm to 80-100 cm. In the southern area, median size has been more variable, but shows a gradual decline over time (Figure 4), and maximum size has declined from around 100 cm before 1982 to 60-80 cm since 1990.

Special Comments

This assessment is uncertain for a number of reasons, including poor quality of some data and uncertainties in life history parameters. The assessment hinges critically on assumptions regarding growth, longevity, and natural mortality of monkfish, all of which are poorly known. In addition, commercial catches prior to 1993 are not well characterized. Model results are sensitive to the assumed value of natural mortality, revised in this assessment from 0.2 to 0.3 per year. This decision was based on the observed longevity of male and female fish in the resource; however, the actual lifespan of monkfish may be greater than that which has been thus far observed. Uncertainties in key life history parameters and historical catches are unlikely to be resolved in the short term.

In developing management alternatives, it should be recognized that monkfish is a “data-poor” species and this assessment has significant uncertainty. Landings on the order of 5,000 mt in

each management area (roughly the proposed TACs in FMP Framework Adjustment 4) are unlikely to result in a change in stock status, and should allow monkfish resources in both regions to increase.

The SCALE model used for assessment could only be applied to the period from 1980 to the present. Monkfish biomass indices in NEFSC surveys were approximately twice as high prior to 1980 than after this time. As such, the productivity of the resource may be higher than reflected in this assessment and thus, the possibility of attaining higher biomass levels in the future should not be discounted. Reconsideration of the newly proposed biomass reference points might thus be justified in the future.

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Figure 1. Trends in NEFSC fall survey biomass indices (3-year moving average) of monkfish relative to existing biomass overfishing definitions, in the northern and southern management regions.

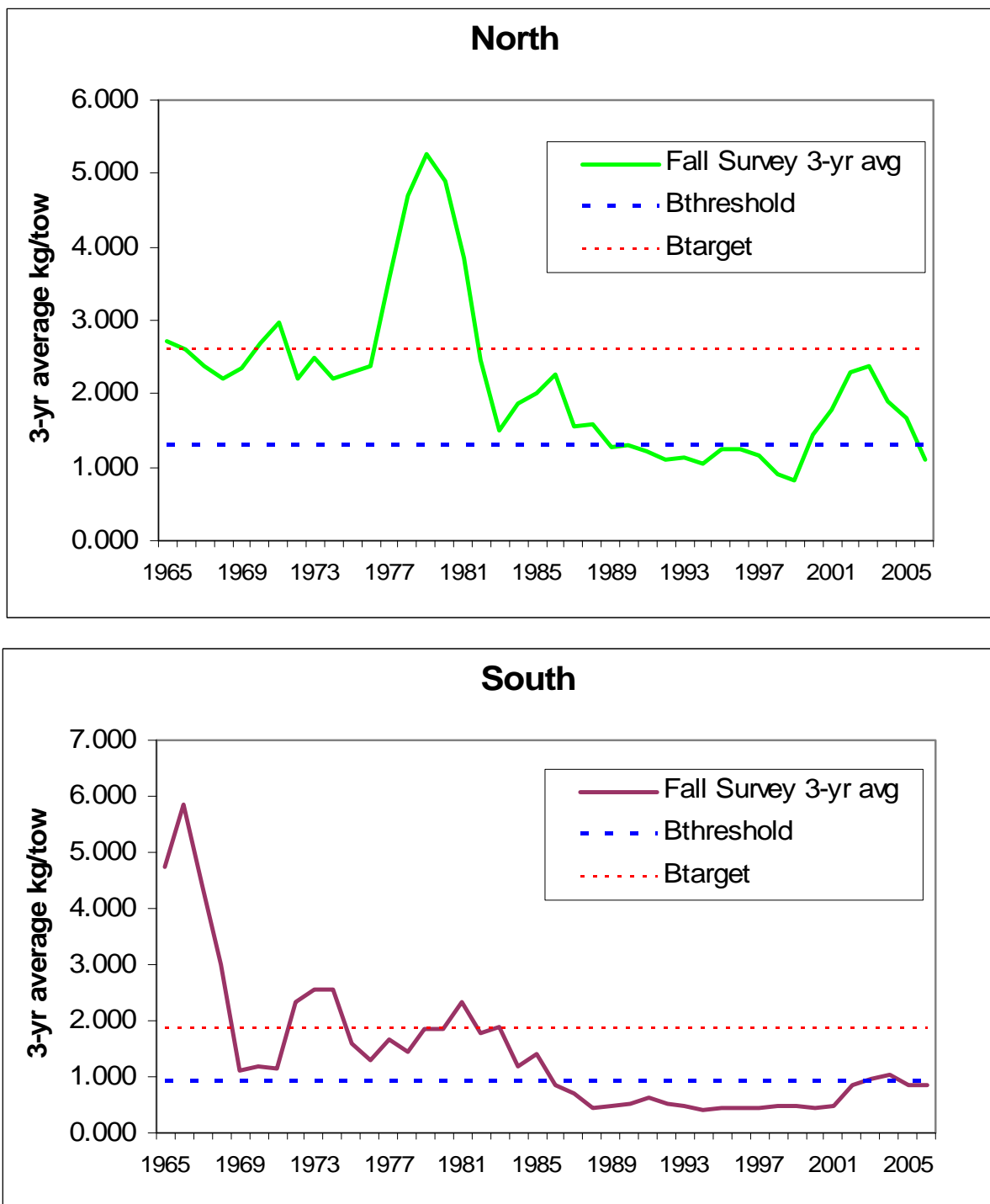


Figure 2. Trends in total biomass and fishing mortality rate (F), from the assessment model (SCALE), along with new (proposed) biological reference points for monkfish from the 2007 assessment. (A) northern management region, (B) southern management region.

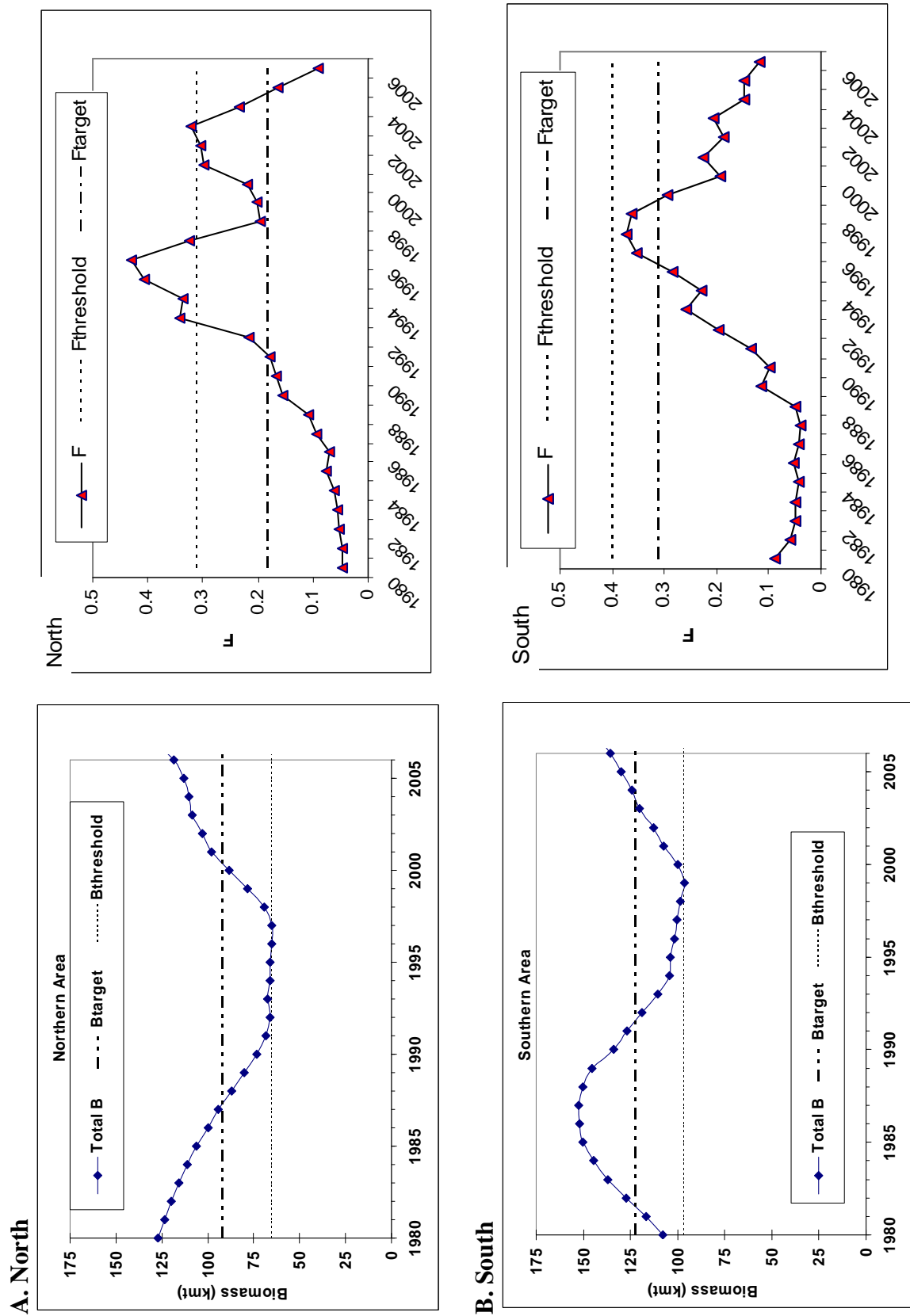


Figure 3. Recruitment indices (stratified mean number per tow) for monkfish from winter, spring, summer (shrimp, scallop), and autumn NEFSC surveys for the northern and southern management regions.

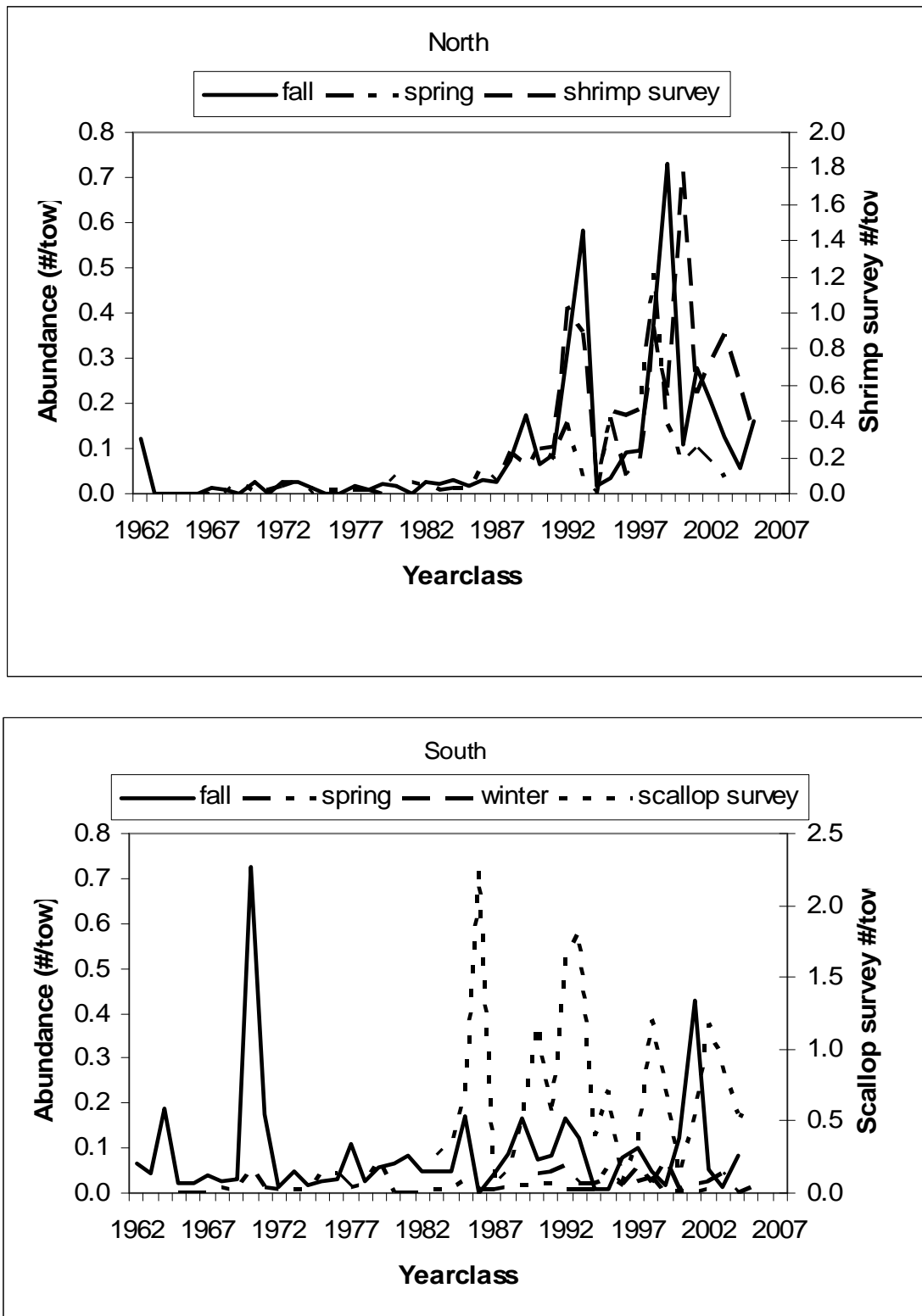
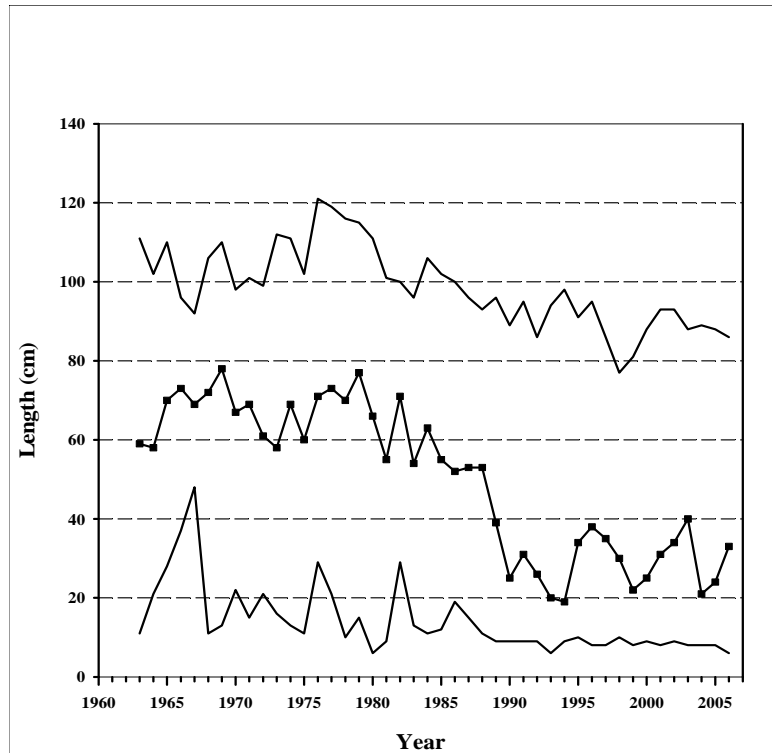


Figure 4. Body length of monkfish (minimum, median, maximum) over time in the NEFSC autumn bottom trawl survey. (A) northern management region and (B) southern management region.

A.



B.

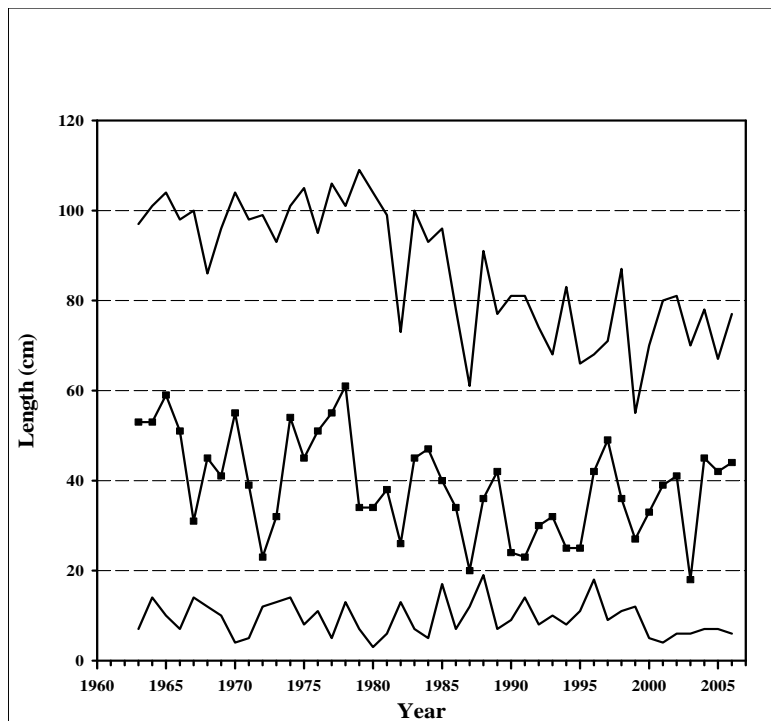


Figure 5. Projection of total biomass to 2009 based on the Statistical Catch-At-Length (SCALE) model in the northern and southern management regions.

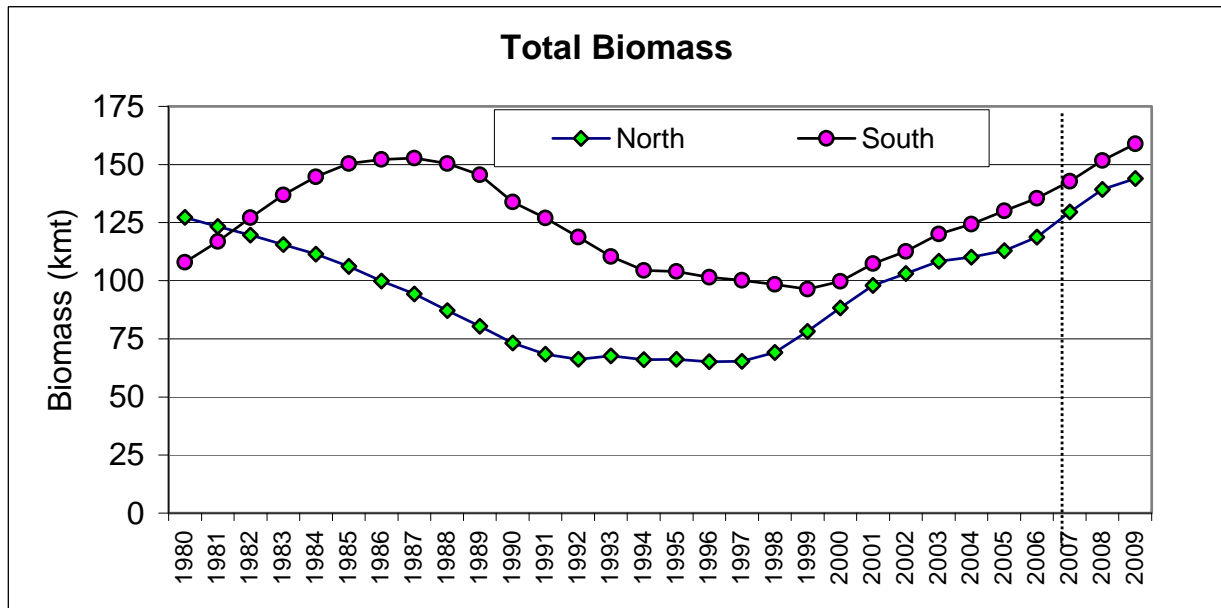


Figure 6. Monkfish commercial fishery landings, by management region and total, 1964-2006.

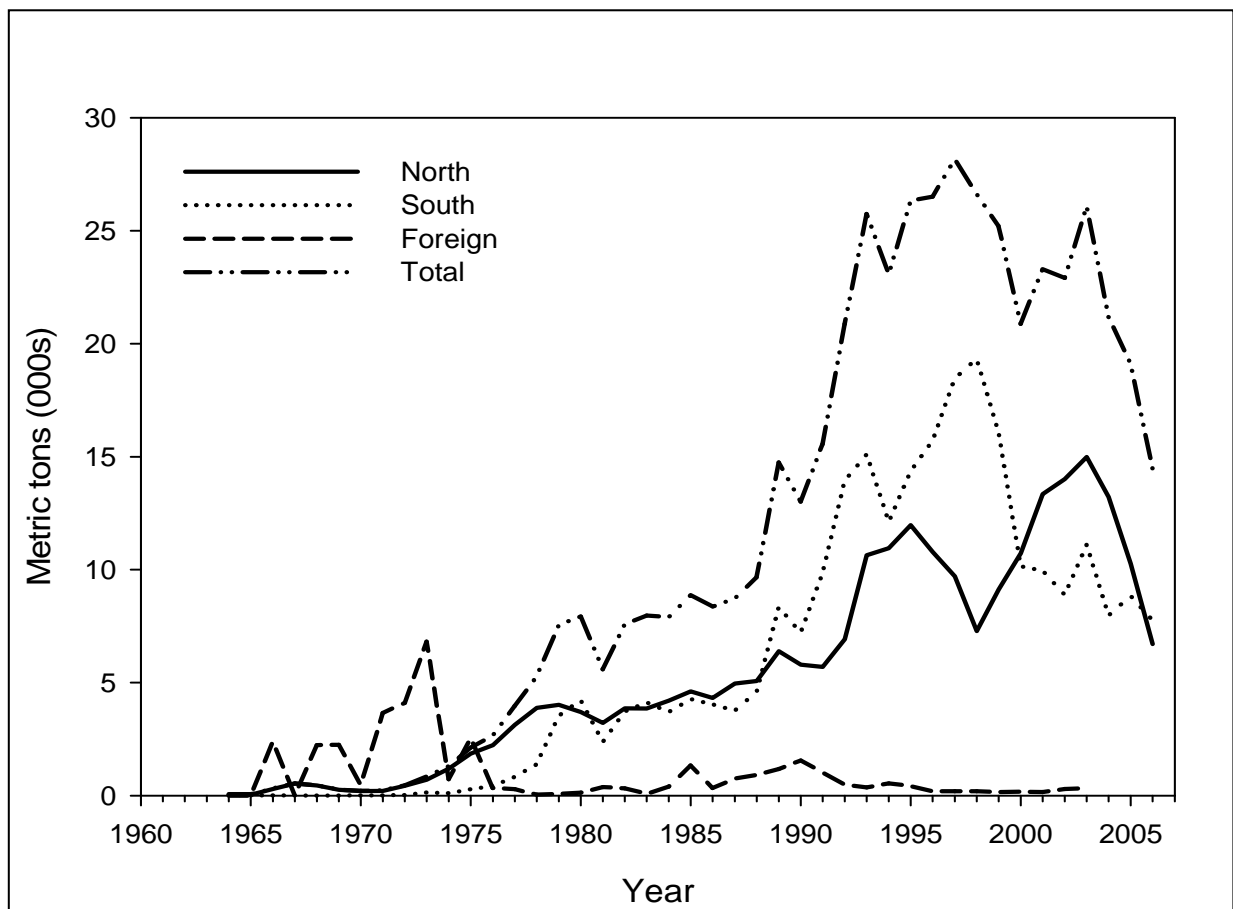
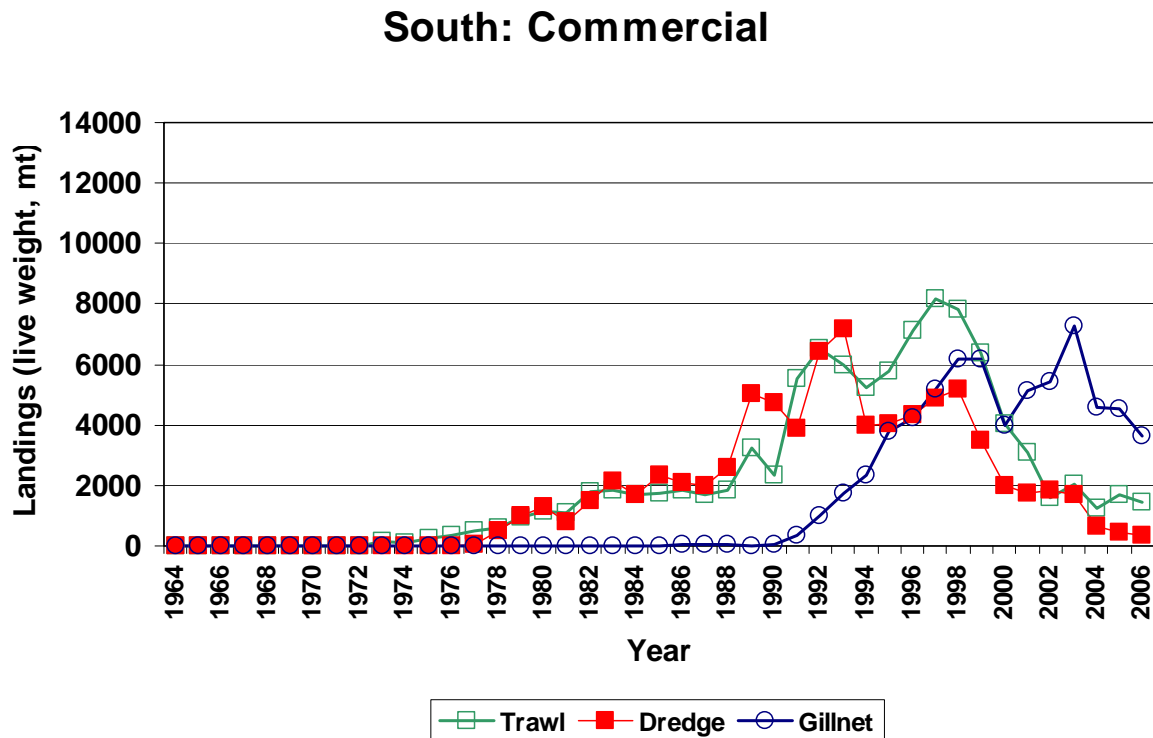
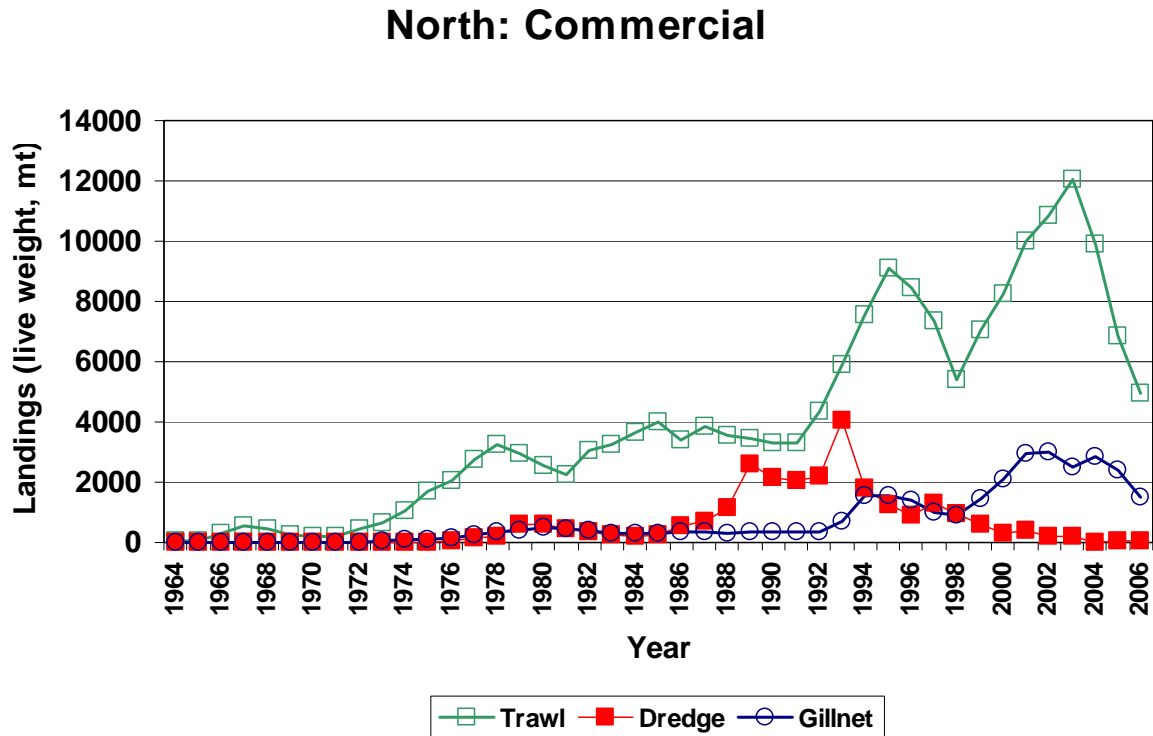


Figure 7. Monkfish commercial fishery landings by major gear type, northern and southern management regions.



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Manuscripts must have an abstract and table of contents, and (if applicable) lists of figures and tables. As much as possible, use traditional scientific manuscript organization for sections: "Introduction," "Study Area" and/or "Experimental Apparatus," "Methods," "Results," "Discussion," "Conclusions," "Acknowledgments," and "Literature/References Cited."

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For in-text citation, use the name-date system. A special effort should be made to ensure that all necessary bibliographic information is included in the list of cited works. Personal communications must include date, full name, and full mailing address of the contact.

Preparation

Once your document has cleared the review process, the Editorial Office will contact you with publication needs – for example, revised text (if necessary) and separate digital figures and tables if they are embedded in the document. Materials may be submitted to the Editorial Office as files on zip disks or CDs, email attachments, or intranet downloads. Text files should be in Microsoft Word, tables may be in Word or Excel, and graphics files may be in a variety of formats (JPG, GIF, Excel, PowerPoint, etc.).

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National Marine Fisheries Service, NOAA
166 Water St.
Woods Hole, MA 02543-1026

**MEDIA
MAIL**

Publications and Reports of the Northeast Fisheries Science Center

The mission of NOAA's National Marine Fisheries Service (NMFS) is "stewardship of living marine resources for the benefit of the nation through their science-based conservation and management and promotion of the health of their environment." As the research arm of the NMFS's Northeast Region, the Northeast Fisheries Science Center (NEFSC) supports the NMFS mission by "conducting ecosystem-based research and assessments of living marine resources, with a focus on the Northeast Shelf, to promote the recovery and long-term sustainability of these resources and to generate social and economic opportunities and benefits from their use." Results of NEFSC research are largely reported in primary scientific media (*e.g.*, anonymously-peer-reviewed scientific journals). However, to assist itself in providing data, information, and advice to its constituents, the NEFSC occasionally releases its results in its own media. Currently, there are three such media:

NOAA Technical Memorandum NMFS-NE -- This series is issued irregularly. The series typically includes: data reports of long-term field or lab studies of important species or habitats; synthesis reports for important species or habitats; annual reports of overall assessment or monitoring programs; manuals describing program-wide surveying or experimental techniques; literature surveys of important species or habitat topics; proceedings and collected papers of scientific meetings; and indexed and/or annotated bibliographies. All issues receive internal scientific review and most issues receive technical and copy editing.

Northeast Fisheries Science Center Reference Document -- This series is issued irregularly. The series typically includes: data reports on field and lab studies; progress reports on experiments, monitoring, and assessments; background papers for, collected abstracts of, and/or summary reports of scientific meetings; and simple bibliographies. Issues receive internal scientific review and most issues receive copy editing.

Resource Survey Report (formerly *Fishermen's Report*) -- This information report is a regularly-issued, quick-turnaround report on the distribution and relative abundance of selected living marine resources as derived from each of the NEFSC's periodic research vessel surveys of the Northeast's continental shelf. This report undergoes internal review, but receives no technical or copy editing.

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Monkfish Assessment Summary

(Presentation 9/07)

**Northeast “Data Poor” Stocks Working Group:
Monkfish**

**Stephen H. Clark Conference Room – Northeast Fisheries Science Center
Woods Hole, Massachusetts
7/9 – 7/13, 2007**

Review Panel Chairman:

**Dr. John Annala
(GMRI, Maine)**

Panelists :

**Dr. Robert Mohn
(BIO, Canada)**

**Mr. Rafael Duarte
(PNRI, Portugal)**

Background:

**Both stocks
have Rebuilding Plans**

**Rebuilding Deadline =
May, 2010**

Assessment

Monkfish

Review Outcome

Accepted

(6 TORs completed
successfully.

3 TORs partially completed)

Reports available at: www.nefsc.noaa.gov/nefsc/saw/

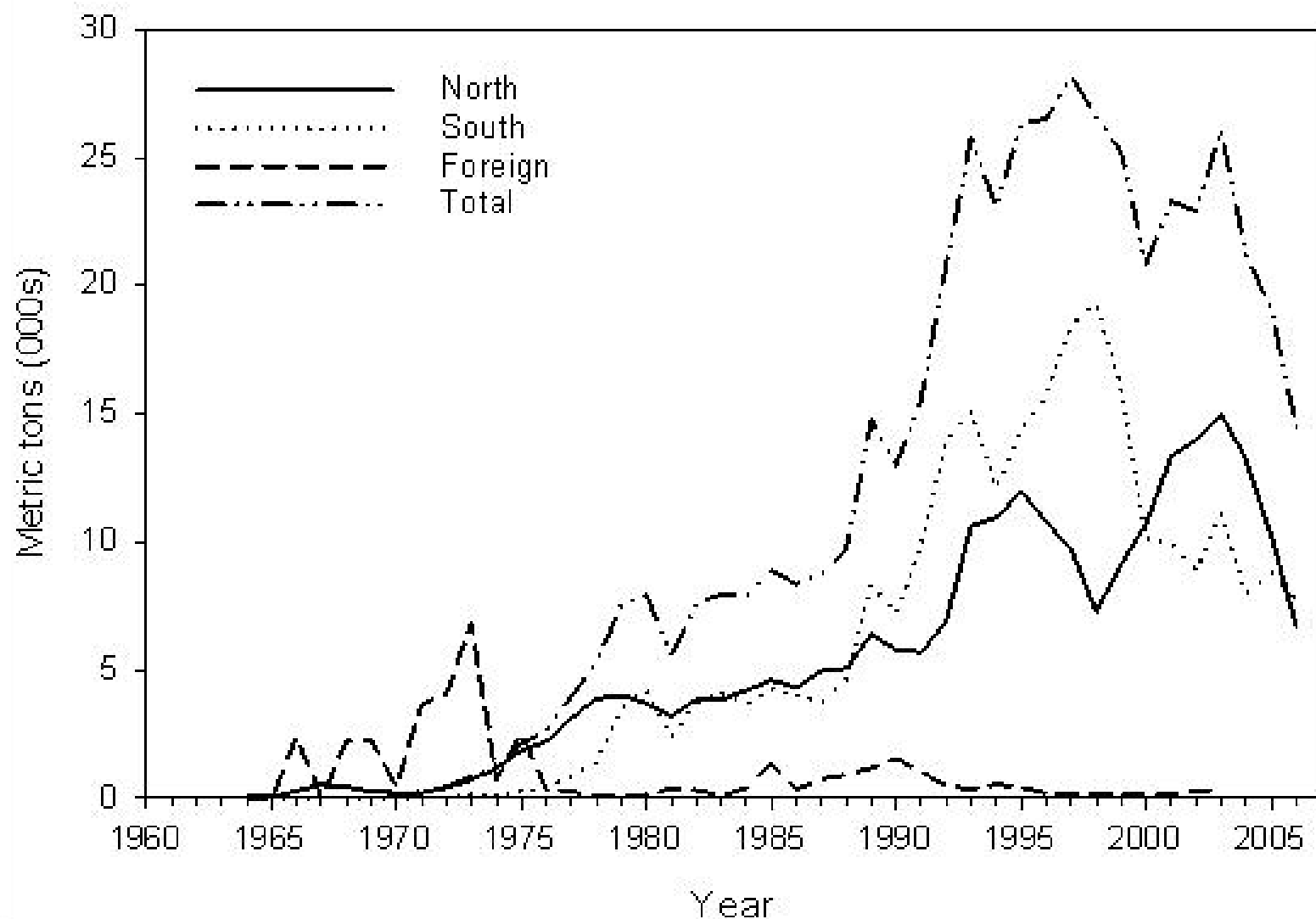
and

www.nefsc.noaa.gov/nefsc/publications/series/crdlist.htm

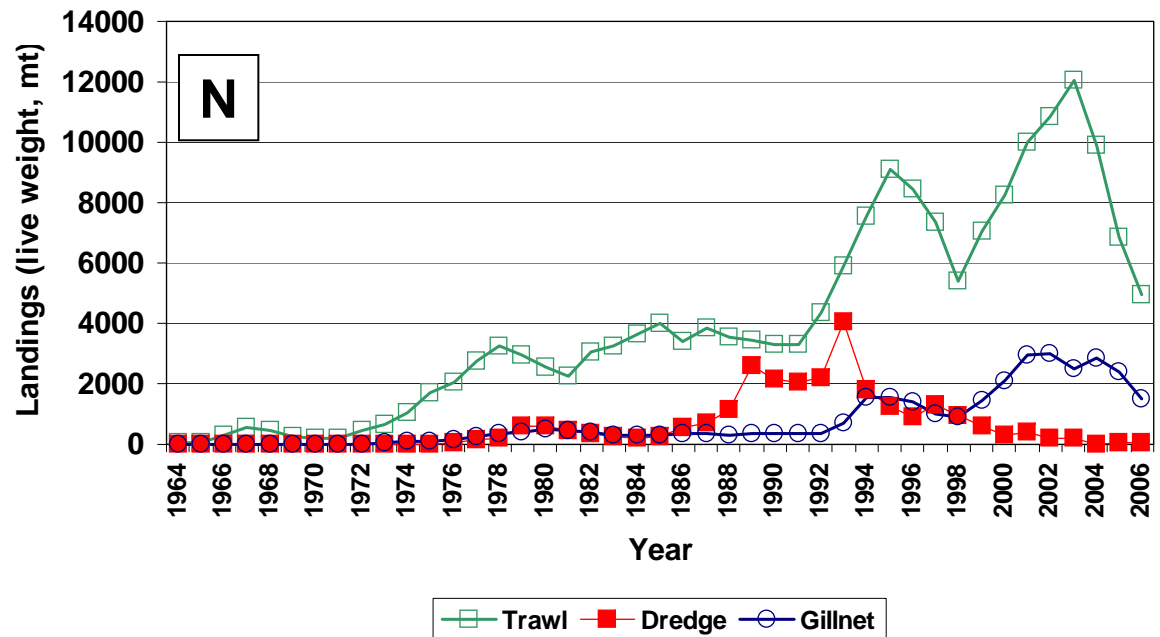
Monkfish TORs

1. Characterize the commercial landings, effort, LPUE, and discards for monkfish in the northern and southern management areas.
2. Evaluate the fishery-independent and fishery-dependent measures of relative abundance with respect to their accuracy and precision.
3. Incorporate recommendations of the March 2006 External Peer review of the 2001 and 2004 Cooperative Monkfish Surveys. Incorporate these industry based assessments as appropriate into the stock assessment. Recommend whether additional cooperative surveys should be conducted.
4. Estimate fishing mortality, spawning stock biomass, and total stock biomass or suitable proxies for as many years as possible for existing time series. Characterize the uncertainty of those estimates.
5. If appropriate, update or redefine biological reference points (BRPs) that could be used annually for stock status determination, taking into account that survey vessels will change in 2008, and that BRPs must be objective and measurable.
6. Evaluate the current status of the stock assessment units relative to both the existing BRPs and the updated or redefined BRPs (see TOR 5).
7. Compute TALs and measures of uncertainty for Fishing Years 2007 and 2008 (and if possible, future years) under various levels of fishing mortality. If fishing mortality can not be estimated, consider alternative or proxy methodologies for computing TALs.
8. Evaluate the efficacy of management measures and control rules that have been used to rebuild monkfish to target levels. Specifically address whether the stocks can be rebuilt by 2010 under the existing rebuilding program, and indicate what the fishing mortality rates or catch limits would have to be. Consider alternative approaches with respect to the probability of attaining target levels and the relevance of time lags in availability of information for formulation of management decisions.
9. Review research conducted to date that addresses research recommendations in the previous SARC-reviewed assessments. Incorporate any validated results into

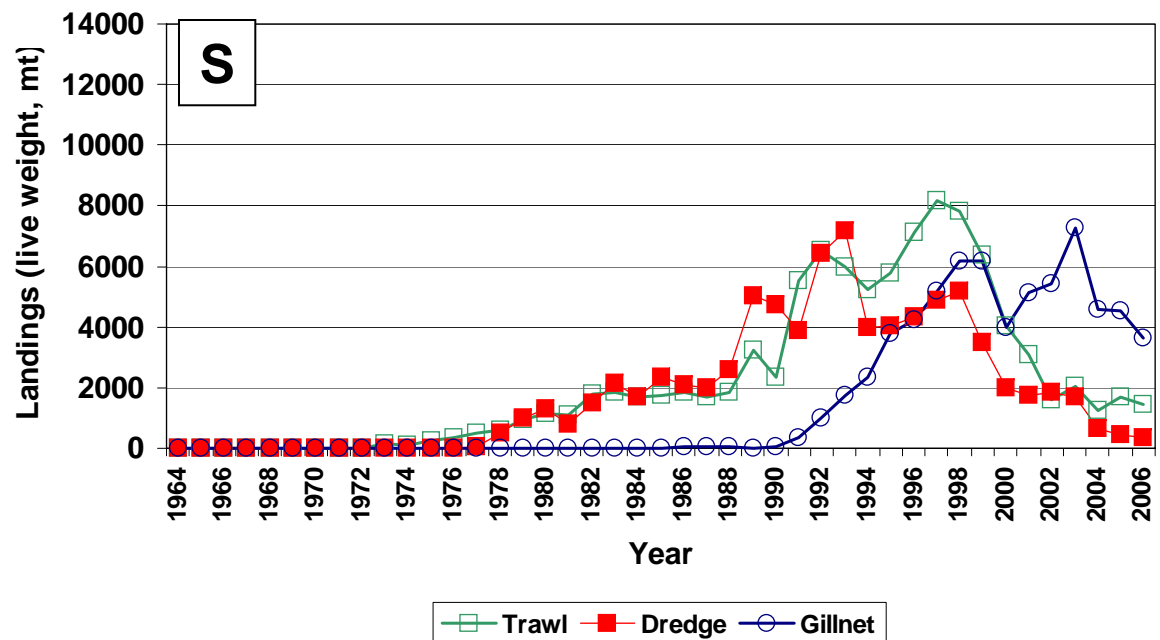
Monkfish – Commercial Landings (1964-2006):



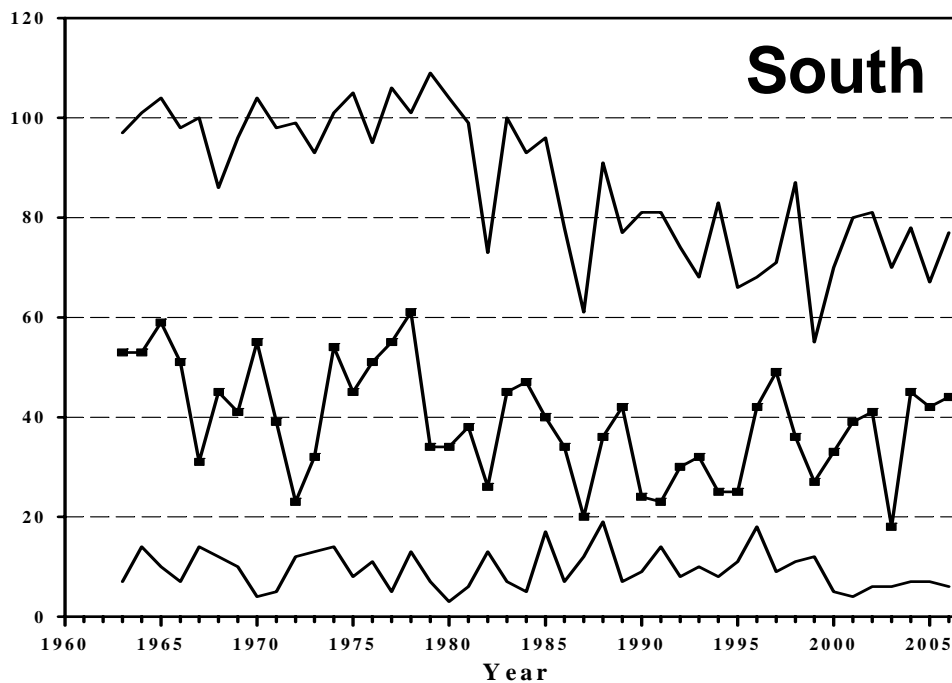
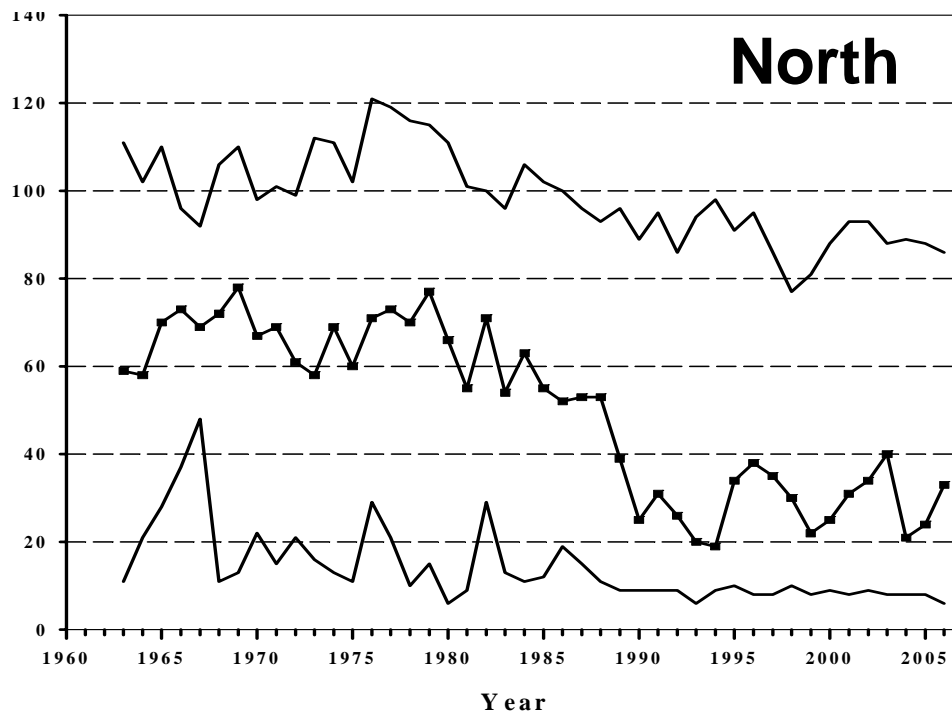
Monkfish – Commercial Landings by Gear:



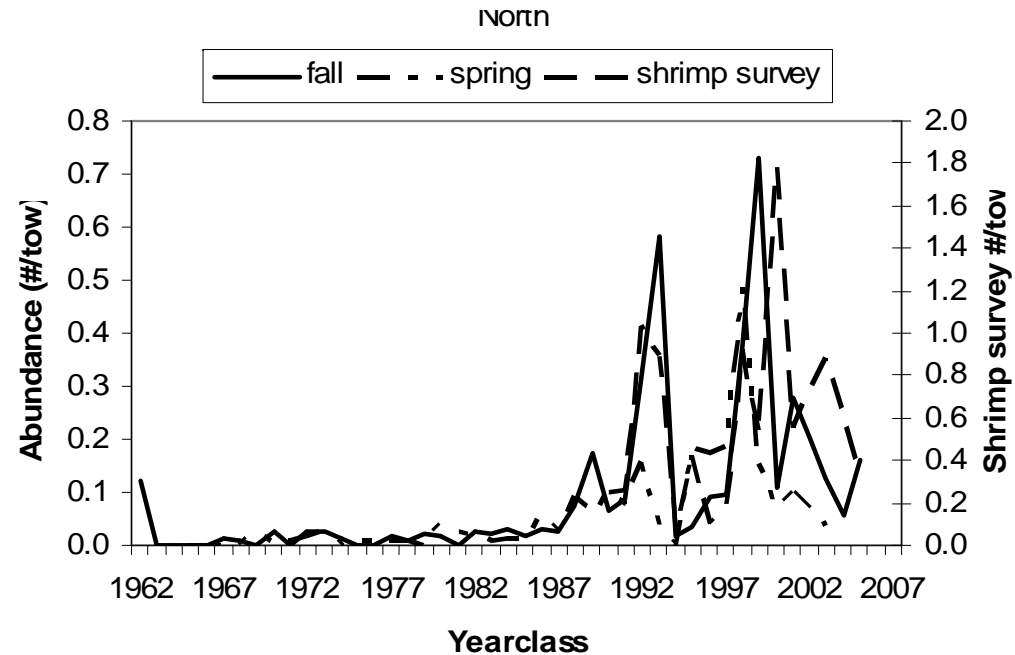
South: Commercial



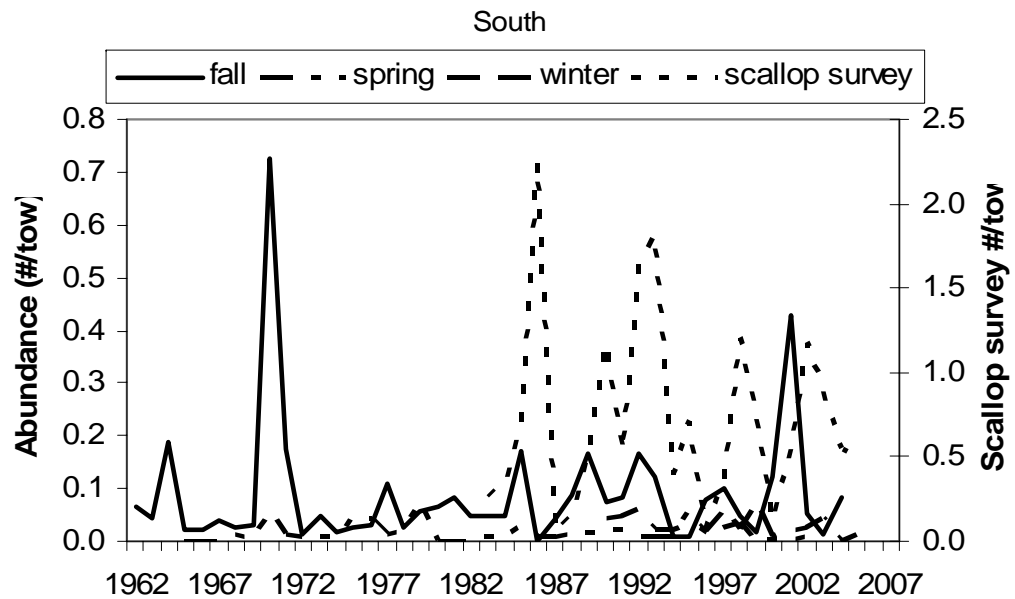
Monkfish – Survey Trends in Body Length (min, median, max)



Monkfish – Recruitment Survey Indices



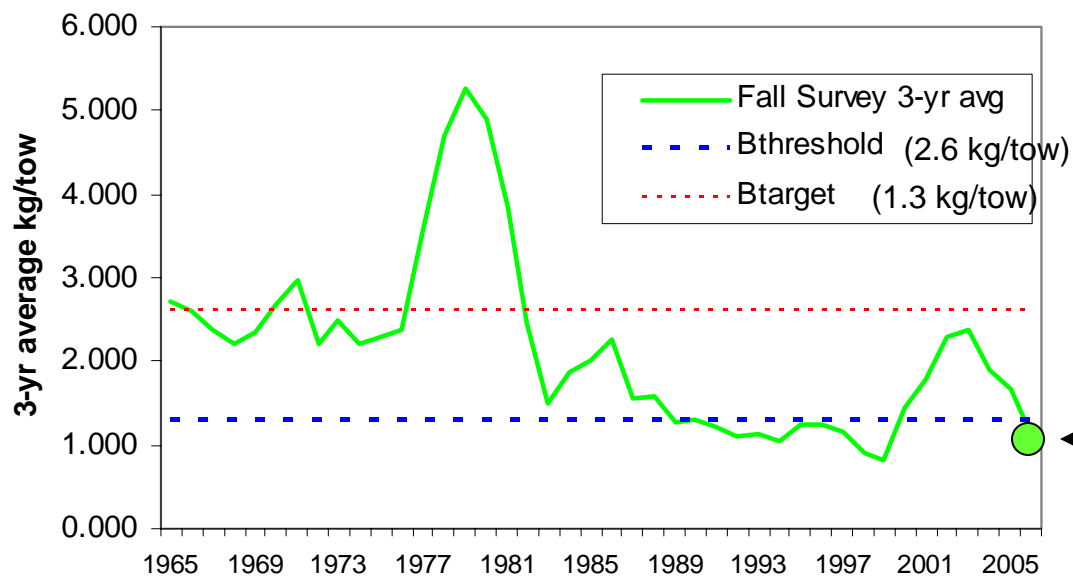
Strong YC:
1993
1999
2001



Strong YC:
2001

Monkfish – NEFSC Fall Survey Indices, Stock Status :

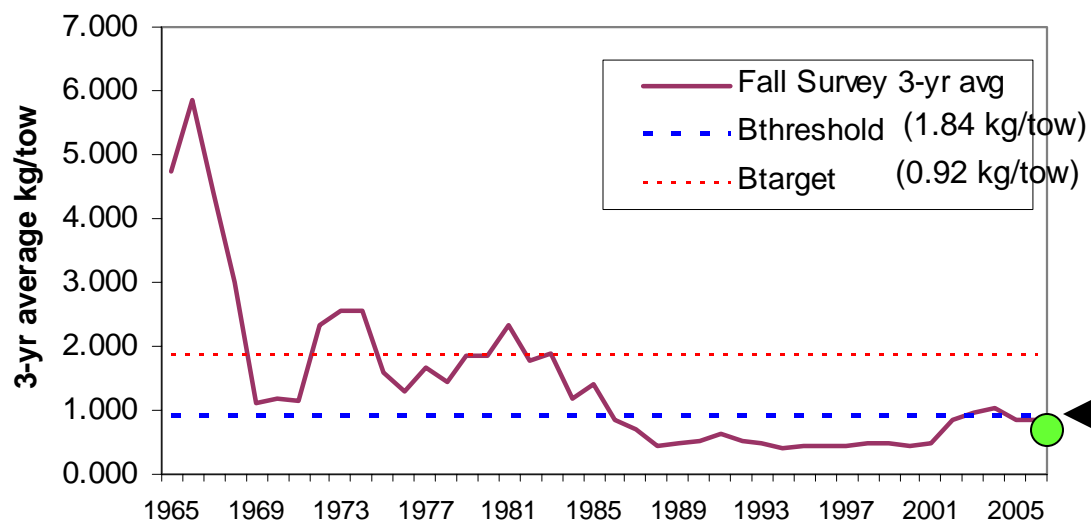
North



**Status based on
Current FMP Def.**

**Overfished
(1.1 kg/tow)**

South



**Overfished
(0.87 kg/tow)**

New Monkfish Assessment Model was used:

“SCALE” Statistical Catch-at-Length

Strengths of the new approach:

Uses much more of the available data:

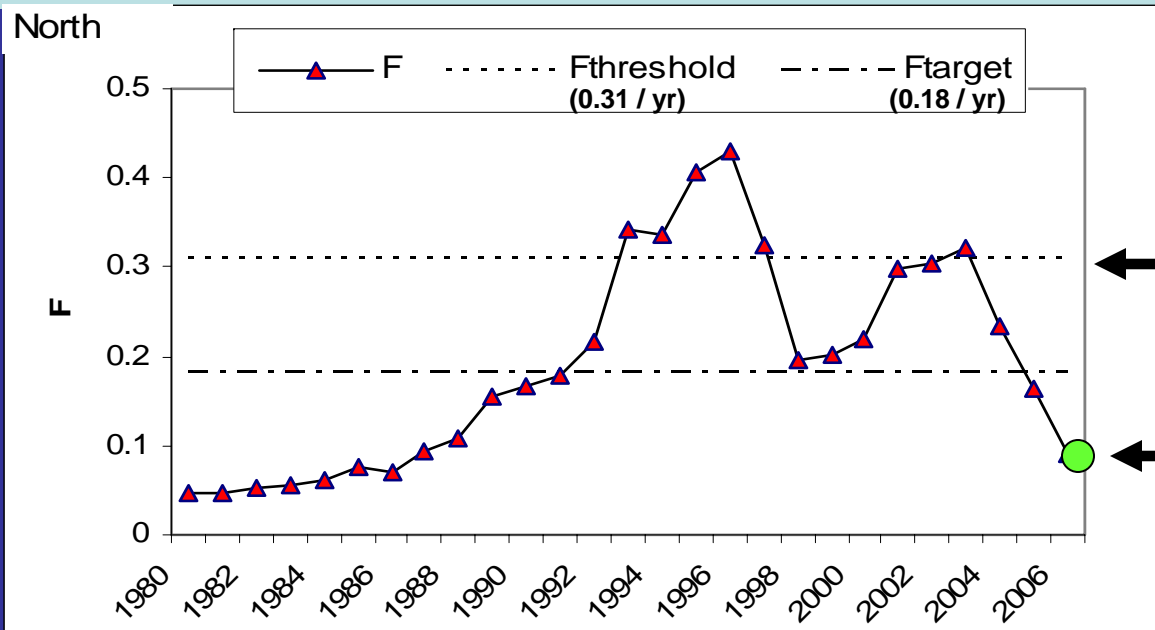
**NEFSC and Cooperative Surveys; total catches;
catch at length; recruitment indices;
growth and mortality rates**

Weaknesses:

**New model; starting year is 1980 (not 1960s);
many inputs to model have high uncertainty.**

Northern Monkfish: Biomass, Fishing Mortality and Stock Status

F

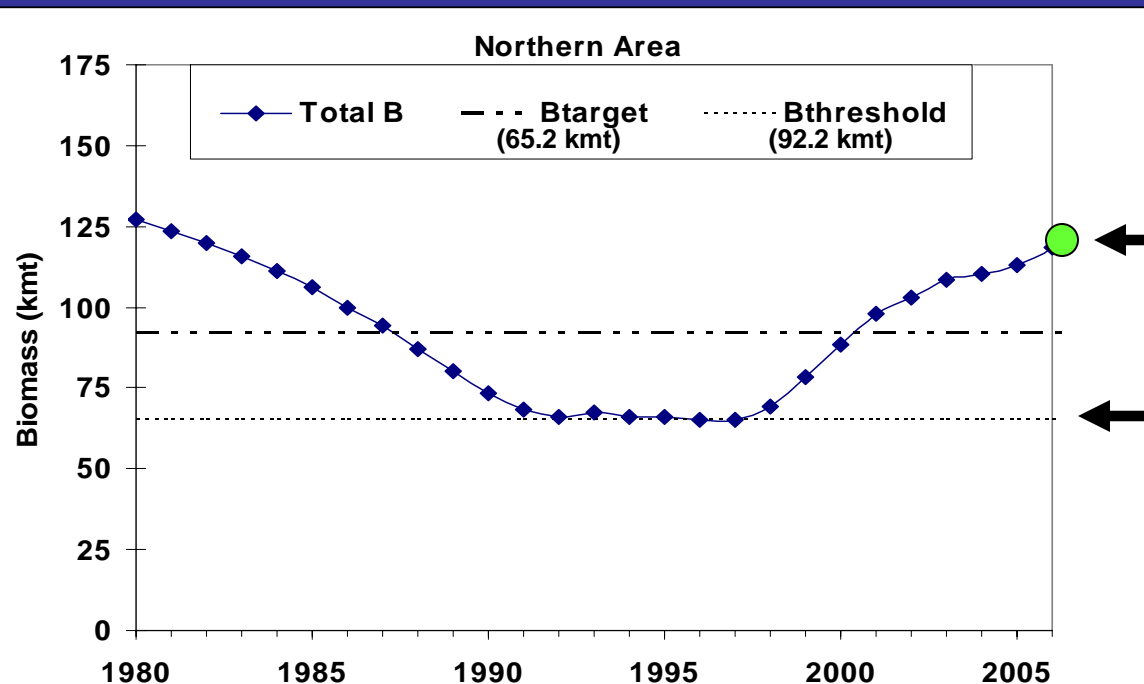


Status based on
New Assessment:

F threshold

Not Overfishing
($F_{2006} = 0.09$)

Biomass

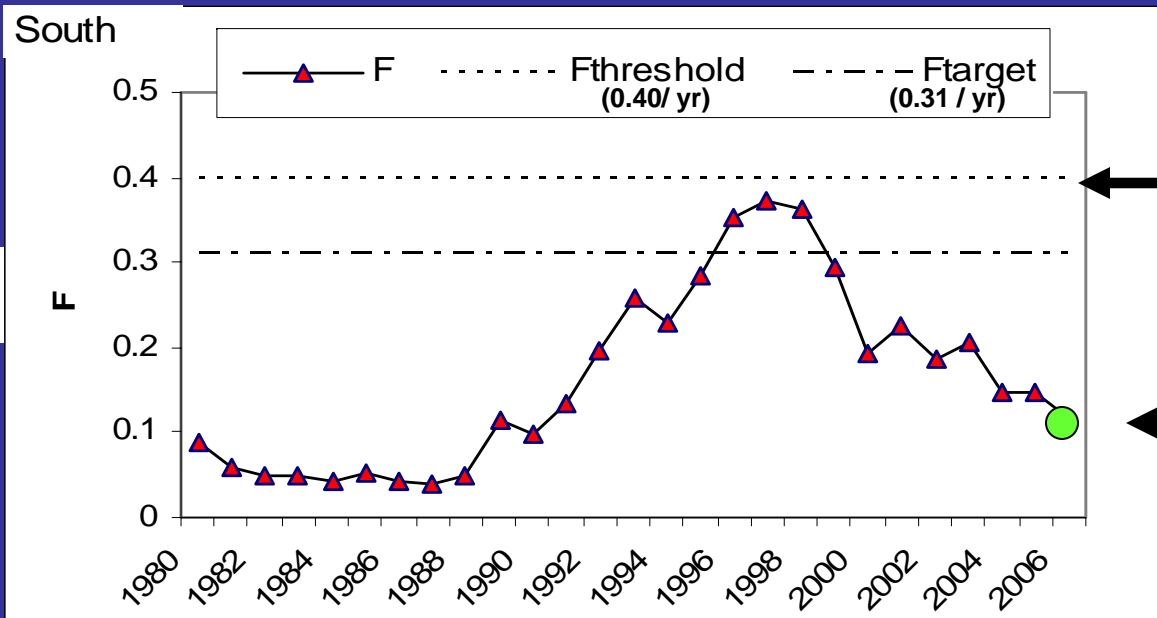


Not Overfished
($B_{2006} = 118.7$ kmt)

B threshold

Southern Monkfish: Biomass, Fishing Mortality and Stock Status

F

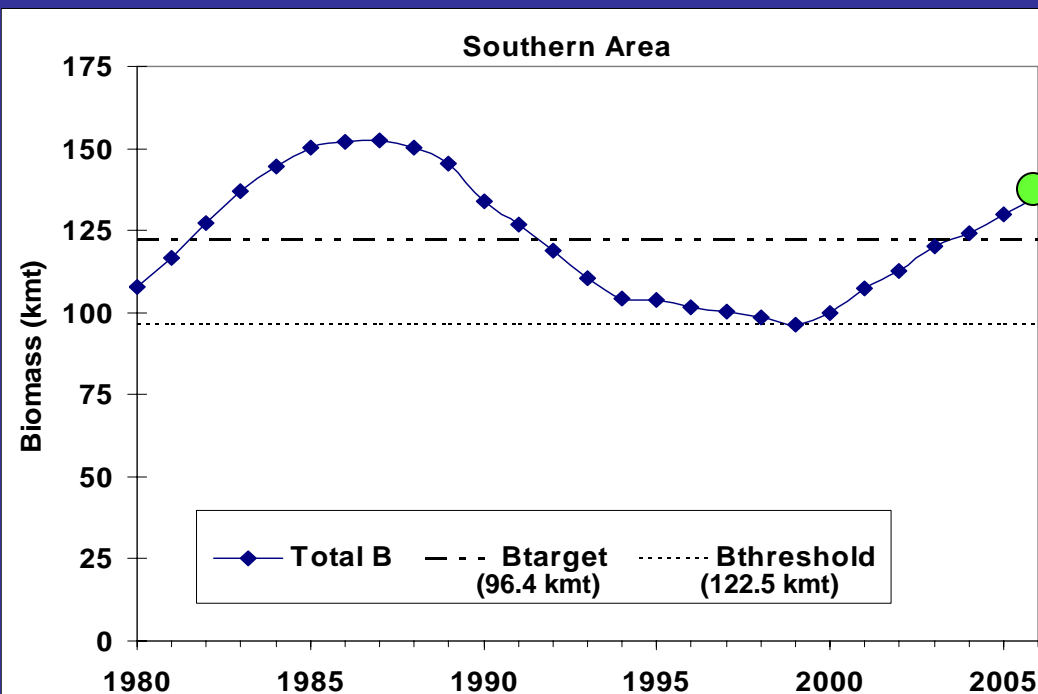


Status based on
New Assessment

F threshold

Not Overfishing
($F_{2006}=0.12$)

Biomass



Not Overfished
($B_{2006}=135.5$ kmt)

B threshold

Assessment Uncertainty:

1. “Monkfish is a data-poor species, and there are significant uncertainties associated with the assessment results. This should be considered when developing management measures.”

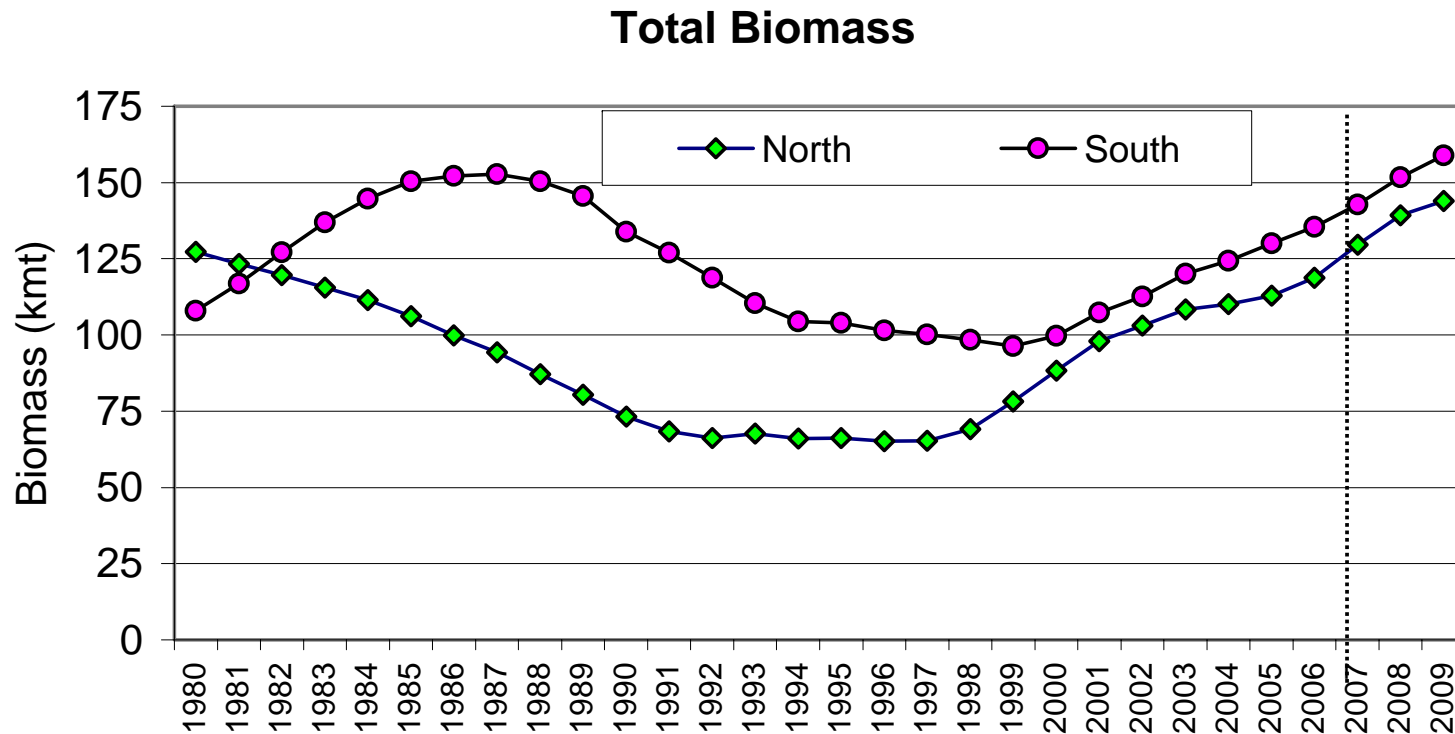
2. “Landings on the order of 5,000 mt in each management area (roughly the proposed TACs in FMP Framework Adjustment 4) are unlikely to result in a change in stock status, and should allow monkfish resources in both regions to increase.”

Uncertainty (cont.)

3.

“The SCALE model used for assessment could only be applied to the period from 1980 to the present. Monkfish biomass indices in NEFSC surveys were approximately twice as high prior to 1980 than after this time. As such, the productivity of the resource may be higher than reflected in this assessment and thus, the possibility of attaining higher biomass levels in the future should not be discounted. Reconsideration of the newly proposed biomass reference points might thus be justified in the future.”

Monkfish Projection



Projection of total biomass to 2009 based on the Statistical Catch-At-Length (SCALE) model in the northern and southern management regions. Assuming TACs of ~5kmt per region.










“Further work is needed to develop a complete forecasting approach.”

Monkfish TORs

 Completed

 Partial

 Incomplete

-  1. Characterize the commercial landings, effort, LPUE, and discards for monkfish in the northern and southern management areas.
-  2. Evaluate the fishery-independent and fishery-dependent measures of relative abundance with respect to their accuracy and precision.
-  3. Incorporate recommendations of the March 2006 External Peer review of the 2001 and 2004 Cooperative Monkfish Surveys. Incorporate these industry based assessments as appropriate into the stock assessment. Recommend whether additional cooperative surveys should be conducted.
-  4. Estimate fishing mortality, spawning stock biomass, and total stock biomass or suitable proxies for as many years as possible for existing time series. Characterize the uncertainty of those estimates.
-  5. If appropriate, update or redefine biological reference points (BRPs) that could be used annually for stock status determination, taking into account that survey vessels will change in 2008, and that BRPs must be objective and measurable.
-  6. Evaluate the current status of the stock assessment units relative to both the existing BRPs and the updated or redefined BRPs (see TOR 5).
-  7. Compute TALs and measures of uncertainty for Fishing Years 2007 and 2008 (and if possible, future years) under various levels of fishing mortality. If fishing mortality can not be estimated, consider alternative or proxy methodologies for computing TALs.
-  8. Evaluate the efficacy of management measures and control rules that have been used to rebuild monkfish to target levels. Specifically address whether the stocks can be rebuilt by 2010 under the existing rebuilding program, and indicate what the fishing mortality rates or catch limits would have to be. Consider alternative approaches with respect to the probability of attaining target levels and the relevance of time lags in availability of information for formulation of management decisions.
-  9. Review research conducted to date that addresses research recommendations in the previous SARC-reviewed assessments. Incorporate any validated results into

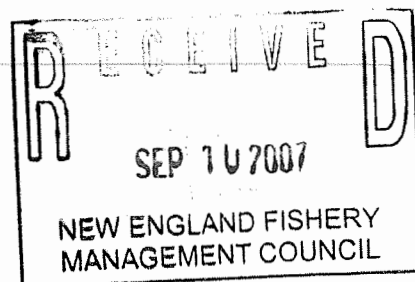
Monkfish – Reviewer Comments:

- 1. SCALE model is good because it links all sources of info (previously treated separately). This is the preferred model.**
- 2. Panel is concerned because results are very dependent on the value assumed for natural mortality rate.**
- 3. Panel is concerned over lack of fit of the model to the adult length.**
- 4. Using the revised BRPs and SCALE model, monkfish are not overfished and overfishing is not occurring.**
- 5. Full projections were not done, and the projections do not have estimates of uncertainty.**

Monkfish – Reviewer Recommendations :

- 1. Next time, see if a 2-sex model would work, taking into account their different growth rates.**
- 2. Continue work on aging.**
- 3. Continue work on estimation of natural mortality rate (M).**
- 4. Consider using larger length classes in the SCALE model.**
- 5. The existing (current) BRPs should not be used, and should be replaced by the redefined BRPs.**

From: Maggie Raymond [maggieraymond@comcast.net]
Sent: Friday, September 07, 2007 4:04 PM
To: John Pappalardo; Pete Jensen
Cc: Phil Haring; Karen Roy; Marc Agger; Dan Furlong
Subject: monkfish



Mr. John Pappalardo, Chairman, New England Fishery Management Council

W. Peter Jensen, Chairman, Mid-Atlantic Fishery Management Council:

Dear John/Pete:

As you know, the monkfish industry is anxiously awaiting the implementation of monkfish FW 4 and we write to urge you to do whatever you can to expedite that implementation. As we've explained in earlier communication, the interim rule is causing unnecessary hardship for the industry, particularly in light of the good news about the status of the monkfish resource provided in the latest assessment.

We understand that the New England Council will likely, at its September meeting, initiate FW 5 in order to incorporate the new monkfish reference points into the FMP. We are writing to urge the Council, at the same time, to re-consider whether the restrictions in FW 4 continue to be warranted given the the healthy status of the monkfish resource.

In addition, we request that the Council convene, at the earliest opportunity, a meeting of the Monkfish Advisory Panel in order to brief the Panel on the new assessment and seek their guidance on the implications of the assessment on the management program.

We look forward to your response.

Sincerely,

Marc Agger, Monkfish Defense Fund

Maggie Raymond, Associated Fisheries of Maine

9/10/2007



#4

New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
 John Pappalardo, *Chairman* | Paul J. Howard, *Executive Director*

MEMORANDUM

DATE: September 4, 2007
TO: New England Council members
FROM: Phil Haring
SUBJECT: Issues for consideration in Monkfish Framework 5

The Council will initiate Framework Adjustment 5 to the Monkfish FMP at the September 18-19th meeting, primarily in order to incorporate revised biomass reference points recommended by the recent stock assessment (SAW 46). In addition to that action, there are a number of issues for consideration that have been raised by industry and/or Plan Development Team members. These are:

1. Days-at-sea (DAS) carryover provisions
2. Monkfish gillnet rules applicable to vessels enrolled in the Multispecies Trip Gillnet Category
3. Minimum mesh size applicable to Permit Category C and D Monkfish vessels that also hold a limited access multispecies permit while fishing on a monkfish/multispecies DAS.
4. Frontloading of DAS by monkfish vessels that are required under multispecies regulations to use a VMS.
5. Vessels fishing for, and landing monkfish under the 3-hour window provision
6. Monkfish incidental catch limit on large mesh vessels fishing in the Mid-Atlantic Regulated Mesh Area (5% of total weight of fish on board), and
7. Requirement to obtain a Letter of Authorization (LOA) to fish for monkfish in the Northern Fishery Management Area

The following summarizes the issues that, pending Council approval, will be addressed by the Monkfish Committee and considered in Framework 5.

Biological Reference Points

SAW 46 completed an assessment of monkfish which included recommending revisions to existing biomass reference points from a survey index basis to an absolute biomass basis. SAW 46 retained the fishing mortality reference as based on F_{\max} , but revised the estimates of F_{\max} from $F=0.2$ to $F=0.31$ in the north and $F=0.40$ in the south. While the estimates of F_{\max} changed, the basis for the overfishing threshold did not, and no action is required by the Council. Adopting the revised biomass reference point, however, will require a regulatory action, such as a framework.

The following table shows the recommended biomass target and minimum biomass threshold reference points recommended by SAW 46, as well as the estimates of 2006 biomass. It should be noted that the minimum biomass threshold is based on the lowest estimated biomass level in the 1980-2006 period, rather than $\frac{1}{2}$ the biomass target, which is the standard method recommended in the National Standard 1 Guidelines. Since the recommended target is higher (more conservative)

than the value of $\frac{1}{2} B_{\text{target}}$ the recommended threshold is not inconsistent with the guidelines. Also noteworthy in the following table is the observation that both stocks are above the biomass target, and are, therefore, “rebuilt”, but this conclusion should be taken in the context of the uncertainty and cautionary statements in the assessment report.

	B_{2006} (mt)	B_{target} (mt)	$B_{\text{threshold}}$ (mt)
NFMA	118,700	92,200	65,200
SFMA	135,500	122,500	96,400
B_{target} = average of total biomass 1980 – 2006			
$B_{\text{threshold}}$ = lowest value of total biomass 1980 – 2006			

Other issues for consideration in Framework 5

1. DAS carryover . Under the initial Monkfish FMP, which allocated 40 monkfish DAS, vessels were allowed to carryover 10 unused monkfish DAS, consistent with the carryover provisions of the Multispecies FMP, which at that time allocated 88 multispecies DAS to Fleet Category vessels. In developing Framework 4, which proposed reducing monkfish DAS to 31 and 23, north and south, respectively, the Monkfish PDT recommended reducing the carryover DAS allowance to 4 DAS, since 10 DAS represented a significant potential increase over the allocated DAS. It was apparent that the use of 10 carryover DAS in the southern area during the 2006 fishing year would result in landings exceeding the target TAC, which, in fact, occurred by almost 50%.

Upon considering the PDT’s recommendation, the Monkfish Oversight Committee revised this alternative to reduce the carryover to 6 DAS (versus 4 DAS). The New England Fishery Management Council (NEFMC), however, did not adopt the Committee’s recommendation and retained the 10 DAS carryover, primarily because of problems and delays in vessels being able to get their DAS usage balance. The Mid-Atlantic Fishery Management Council concurred with the NEFMC’s decision. The staff suggests that the Council may want to reconsider the DAS carryover provision, if they want to keep landings to the levels prescribed by the target TACs due to the fact that a 10 DAS carryover is 30% of the total annual allocation of monkfish DAS, and 43% of the DAS allowed in the SFMA.

2. Trip Gillnet vessels. This issue has been raised in conversations between industry members and Council and Regional Office staffs. The original Monkfish FMP split the gillnet vessels into Day and Trip gillnet categories to be consistent with the Multispecies FMP. The primary distinction between the two is that Day gillnet vessels do not have to bring their gear to port, but can let it soak between trips. During the implementation of the FMP, it was realized that all monkfish vessels fish as day gillnet vessels (i.e., they soak their gear), so there was no provision for trip gillnet vessels. The primary issue here is one of interaction with the NE multispecies trip gillnet provisions. If a gillnet vessel holds both a limited access monkfish and a limited access NE multispecies permit, and is declared into the trip gillnet category under its multispecies permit, it must return to port with all of its gear every trip, including its monkfish gear. The Council might want to consider a provision that enables these vessels to leave their monkfish gear in the water. Currently, all gear that is allowed to remain at sea, whether it is multispecies day gillnet or monkfish gillnet gear must be tagged, while multispecies trip gillnet gear is not tagged. This issue appears to be

increasing recently as more vessels are declaring into the trip gillnet category.

3. Minimum mesh issue for limited access monkfish vessels that also hold a limited access multispecies permit (i.e., Category C and D vessels). Based on comments from industry members, the new (Framework 4/temporary rule) requirement to declare a monkfish DAS in the NFMA is causing a problem for gillnet vessels that typically fish both their NE multispecies gillnet gear and monkfish gillnet gear on the same trip. The current minimum mesh requirements for the monkfish fishery state that all gillnet vessels fishing under a monkfish DAS are subject to a minimum mesh size of 10-inches diamond mesh, regardless of whether or not they are using a concurrent NE multispecies. The gillnet vessel owners and operators in the NFMA seem to feel that this is an issue of equity since trawl vessels fishing under both a monkfish and a NE multispecies DAS are subject to the NE multispecies minimum mesh requirements, not the larger monkfish-only DAS minimum mesh requirement. Furthermore, in Framework 4 (pending approval) the Council proposed allowing vessels to change their DAS declaration from NE multispecies DAS to a monkfish DAS any time prior to returning to port, in cases where such vessels exceed the monkfish incidental catch limit while on a multispecies, but not a monkfish DAS. Under that circumstance, vessels are subject to the NE multispecies minimum mesh regulations for the trip, even if they declare a monkfish DAS while at sea. The Council may want to consider modifying the rule and allowing gillnet vessels to use both gears while on a monkfish DAS, regardless of whether they declare such a DAS at sea or prior to leaving port.
4. Frontloading of DAS and VMS requirements for limited access monkfish vessels that also hold a limited access multispecies DAS permit. This issue, raised by industry members in the southern area, relates to both the multispecies VMS requirement and the practice of frontloading monkfish DAS. On the VMS requirement, many vessels with both multispecies and monkfish permits that fish only in the southern area, are upset with the multispecies VMS requirement since they don't use their NE multispecies DAS independent of their monkfish DAS, and don't catch any NE multispecies. These vessels would like an exemption from the VMS requirement. Any such change would require concurrent action to change the regulation in the Multispecies FMP.

The second aspect of this issue is the impact that the VMS requirement has on their ability to "frontload" the DAS clock (begin counting DAS before leaving port so the vessel can land more monkfish per actual time at sea than allowed under the trip limit). Category C and D monkfish vessels with limited access multispecies DAS permits currently cannot frontload if they are using a joint multispecies and monkfish DAS, while vessels that are not required to use a multispecies DAS can. Affected vessels would like to be able to frontload their monkfish-multispecies DAS, and be exempt from the VMS requirement because that system makes it impossible to start the DAS clock until the vessel crosses the demarcation line. If the Council wants to accommodate this request, it would need to also make an adjustment to the multispecies FMP VMS requirement to allow for this exemption.

5. A revision to the 3-hour monkfish gillnet rule. There have been anecdotal reports to the staff that when the monkfish are close enough to shore gillnet vessels are making trips of less than three hours (to avoid the automatic 15-hour rule) and landing a day's worth of monkfish under the trip limit. In some cases, these vessels are reportedly landing multiple trips in one calendar day. This problem has apparently been exacerbated by the VMS requirement, since the counting of the three hours does not start until the vessel crosses the

demarcation line. Some concerned fishermen have suggested that vessels fishing on trips less than three hours be prohibited from landing monkfish, and/or allowing only one landing per calendar day. The staff notes that the original intent of the 3-hour provision in the FMP was to provide a contingency for when bad weather or vessel problems force the vessel to return to port after starting a trip, not to enable vessels to land fish and avoid the 15-hour rule. The Council may want to consider prohibiting landings on trips of three hours or less.

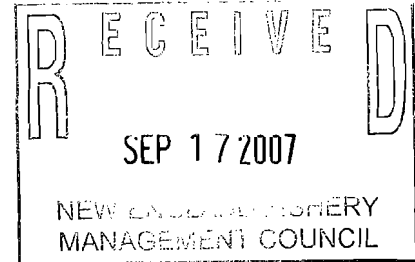
6. The incidental catch allowance for large mesh vessels when not under a DAS program. Vessels fishing with large mesh in the Mid-Atlantic Regulated Mesh Area, when not fishing on a monkfish DAS are allowed to retain monkfish up to 5% of the total weight of fish on board. This provision was initially adopted to accommodate monkfish incidental catch in the summer flounder fishery. Staff has learned, however, that vessels fishing under a Skate Letter of Authorization, which are not limited in the quantity of skates they can land, will land a large amount of whole skates as bait, and then land 5 percent of this catch as monkfish. The Council may want to consider placing an overall cap on the quantity of monkfish that can be landed, still retaining the 5% rule, or simply setting a single possession limit and eliminating the (difficult-to-enforce) percentage rule, and direct the Committee to recommend the appropriate amount.
7. Requirement to obtain a monkfish Letter of Authorization (LOA) to fish in the NFMA. The revised VMS screens and IVR DAS call-in protocol enable vessels to declare the management area that they are fishing in when declaring a monkfish DAS. As a result, several industry members have communicated with NMFS Regional Office staff their interest is eliminating the LOA requirement. While this seems like a reasonable request that would reduce the paperwork burden of the program, there are some issues to be resolved, namely the applicable monkfish incidental catch limit (which varies between north and south) on vessels fishing on a multispecies DAS but not a monkfish DAS. The Council may want to consider retaining the LOA requirement for monkfish limited access vessels fishing in the northern area and fishing on a multispecies DAS, or direct the Monkfish and Enforcement Committees to consider alternatives that facilitate enforcement of the differential incidental catch limits.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 NORTHEAST REGION
 One Blackburn Drive
 Gloucester, MA 01830-2298

#5

SEP 17 2007



Paul J. Howard, Executive Director
 New England Fishery Management Council
 50 Water Street, Mill 2
 Newburyport, MA 01950

Dear Paul:

I am writing to inform you of NOAA's National Marine Fisheries Service (NMFS) approval of Framework Adjustment 4 to the Monkfish Fishery Management Plan (FMP). Although NMFS has approved this action, there are a few issues that I would like to bring to your immediate attention.

The first issue is the days-at-sea (DAS) carryover provision contained in the FMP. The Councils (New England and Mid-Atlantic) included an alternative in Framework 4 to reduce the monkfish DAS carryover amount from 10 DAS to 6 DAS, while the Monkfish Plan Development Team (PDT) recommended a reduction to 4 DAS. In the end, the Councils voted to not change the existing DAS carryover provision contained in the FMP due concerns over NMFS's ability to provide the fishing industry with accurate DAS balance information. The existing DAS carryover allowance of 10 DAS is 32 percent of the total annual DAS allocation and 43 percent of the DAS allowed for vessels fishing in the Southern Fishery Management Area (SFMA). As a result, I am concerned about our ability to manage this fishery within the target total allowable catch (TAC) levels established in Framework 4, and supported by the recent monkfish stock assessment, given the ability of limited access monkfish vessels to fish well above their annual monkfish DAS allocations in a given year. This is of particular concern in the SFMA due to the difference between a limited access monkfish vessel's total annual DAS allocation (30.3 DAS, including a reduction of 0.7 DAS to fund the Monkfish Research Set-Aside Program) and the 23 DAS that SFMA vessels are restricted to using under Framework 4. As the DAS carryover regulations currently are current written, even if a vessel fishing in the SFMA uses all 23 DAS allocated under Framework 4, it could still carryover the remaining 7.3 DAS to the next fishing year and use these carryover DAS in either management area. This ultimately provides vessels fishing in the SFMA with the ability to use 30.3 DAS annually. For these reasons, I am strongly recommending that the Councils revise the monkfish DAS carryover provision in the next monkfish action.

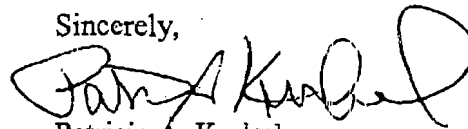
The second issue concerns the results of the recent monkfish stock assessment and the implication on future management of the monkfish resource. The results of the assessment, conducted by the Northeast Data Poor Stocks Working Group (Northeast Fisheries Science Center Reference Document 07-13) became available in August 2007. The report concludes, "Overfishing is not occurring and the resource is not overfished in either the northern or southern management areas." However, the Review Panel also noted that the assessment hinges critically on assumptions regarding growth, longevity, and natural mortality of monkfish, all of which are poorly known. Therefore, I am encouraging the Councils to consider the results of this



assessment with considerable caution, in light of the uncertainty. I am also recommending that the target TACs contained in Framework 4 be maintained until information becomes available indicating that stock biomass would continue to increase at a higher harvest level. Finally, consistent with the assessment summary report, which states "The Review Panel agreed with the Working Group that the existing BRPs should not be used and should be replaced by the redefined BRPs in the Working Group report," I am recommending that the Councils update the biomass reference points contained in the FMP to be consistent with those recommended in the assessment.

Thank you very much for all the work your staff conducted in the development of Framework 4, and for taking the above mentioned issues into consideration.

Sincerely,



Patricia A. Kurkul
Regional Administrator

cc: John W. Pappalardo