

FMP **MONKFISH FMP (JOINT)**
STOCK(S) **Monkfish, managed in two areas, northern and southern**
LAST ASSESSMENT **2022 Management Track, Level 2**

Assessment Model, Terminal Year	Description of Assessment Model	Overfishing?/ Overfished?	In Rebuilding Program?	OFL	ABC/ABC CR	ACL	ACT
N/A. Analytical assessment model invalidated in 2016.	Ismooth index-based approach to providing catch advice.	Assessed as unknown since 2016. Official status unchanged from the conclusion of last analytical assessment (2013, not overfished, over fishing not occurring in both areas)	No	$F_{THRESHOLD} \times B_{CURRENT}$ Lack of analytical assessment precludes calculation of parameters.	$B_{CURRENT} \times \text{Avg expl. rate 1996-2006 (North)}$ $B_{CURRENT} \times \text{Avg expl. rate 2000-2006 (South)}$ The periods of increasing biomass used to calculate the average exploitation rate in each area were updated after the 2013 assessment to 2006-2011 in the North and 2002-2009 in the South. CR is considered a proxy method until more precise age methods can be incorporated into the assessment. CR has not used in the specification of ABCs since 2013.	Equals ABC	ACT = ACL - 3% management uncertainty
Major management issues/challenges: The abandonment of the model because of inaccurate growth data prevents the updating of the OFL and ABC because the model outputs used in those formulas are no longer available. Ismooth uses the recent change in surveys to adjust recent catch to provide catch advice. There is a large amount of latent effort in the fishery, as fewer than 20% of the allocated DAS are used overall, and less than 1/2 of eligible permits actually land monkfish each year. TAL use has been low in the SFMA. Especially in SFMA, discards largely from non-directed fisheries.				MSY/OY Current OFL = 17,805 mt (NFMA), 23,204 mt (SFMA) Current ABC = 8,098 mt (NFMA), 12,316 mt (SFMA)	AMs Specification of annual catch target (ACT) set below the ACL to account for management uncertainty and to prevent the ACL from being exceeded. If an ACL is exceeded, there is an overage deduction on a pound-for-pound basis from the applicable ACT in the second year following the year in which the overage occurred (not implemented after overages in 2018 and 2019).	Discards 2019-2021: 868 mt, 13% of catch in NFMA; 2,664 mt, 47 in SFMA	State Waters state landings >0.4% of catch since FY 2017.
Availability of Biological and Assessment Data		Used in Assessment: Indices of biomass from the NMFS spring and fall bottom trawl surveys are the primary data source used in the assessment. Length frequencies are also reported. Catch, discards, and length frequencies are also available, with discards having only been estimated since 1989. No survey data was available for 2020. Other Data: Indices of biomass from an ASMFC summer survey and a scallop survey are available, as well as associated length frequencies. Estimates of absolute biomass derived from a pair trawl experiment between a chainsweep and rockhopper gear types are available since 2009. Indices of recruitment are available from the NMFS spring and fall surveys, as well as the scallop survey.					
Recent Performance Against Harvest Control Rule		Since FY2017, catch was 84-107% of ACL in NFMA, 31-83% in SFMA; TAL use was 79-107% in NFMA, 34-51% in SFMA.					
Current Management Program		Days-At-Sea, with permit specific possession limits, varying between the northern and southern stock areas					
Variability in Catch/Revenues?		Catches had a recent peak in 2017-2019. Both landings and discards have declined since. Revenue and price has generally declined since 2015.					
Vessels, Permits, Dealers, Processors, Employment		In FY 2021, there were 562 limited access monkfish permit vessels and 1,485 vessels issued open access incidental monkfish permits.					
% Food, % Recreational		Almost 100% is for food. Recreational catch has been <3% of catch since FY2017.					
Fishing Communities		6 primary ports, 14 secondary ports. Highest revenue ports are New Bedford, Gloucester and Boston MA. Ports with very high engagement in the monkfish fishery (2016-2020) are Gloucester, Boston, New Bedford, Pt. Judith, and Montauk.					
Other Economic/Social Factors		Economic factors influencing monkfish revenue include market demand in Europe and the domestic fresh markets, availability of product throughout the year, and product type landed. There has been evidence of price flexibility, with price decreasing 0.41% for every 1% increase in landings. Fuel prices have increased substantially and are likely to stay high for the foreseeable future. Costs for gear, and other supplies has also increased. Increasing costs coupled with lower ex-vessel prices will continue to erode the profitability of monkfish trips.					
Major Sources of Scientific Uncertainty		Age structure and method, stock structure and movement patterns, growth rate, natural mortality, longevity, sex ratios					
Major Sources of Management Uncertainty		CPUE due to difficulty defining "targeted" monkfish trips, substantial latent effort in the fishery, and influence of regulations in other FMPs on operations in the monkfish fishery					
How is the probability of overfishing addressed?		The Ismooth approach used to derive catch advice was found to be unlikely to lead to overfishing in a management strategy evaluation (Legault et al., in press). Risk is also addressed through the implementation of a management uncertainty buffer between the ABC/ACL and the ACT (3%). Metrics for evaluating risk focus on evaluating landings against the TAL and, once an estimate of discards are included, against the ACT, ABC, and OFL.					
What is the consequence of overfishing?		All fisheries would be negatively affected by overfishing, with the directed monkfish fishery impacted the most. Because the FMP is structured to facilitate the bycatch of monkfish in other fisheries first, reductions in allowed monkfish bycatch in other fisheries would be minimally impacted unless overfishing is substantial enough to require the reduction of catch limits below recent levels of monkfish bycatch in other fisheries.					
How are expected net benefits to the Nation currently measured/evaluated?		Net benefits to the Nation are evaluated in analysis associated with each action. Such evaluation is limited to considerations under National Standard 1 to the Magnuson-Stevens Act and are based on achieving optimum yield.					
Interactions with Other Fisheries/Stocks, Bycatch Issues		Significant interaction with the groundfish fishery, also skates, dogfish, summer flounder, scup, and black sea bass. Discards in the scallop dredge fishery.					
Ecosystem Considerations: Trophic Interactions		Some consideration in predator-prey relationship analysis. Studies indicate that monkfish account for upwards of six percent of total consumption by all finfish in the ecosystem, suggesting that maintaining sustainable levels of monkfish biomass will promote biodiversity and ecosystem function.					
Ecosystem Considerations: Habitat		Habitat impacts are evaluated in the analysis of management actions, but not in great detail. Evaluations are made based on changes to the amount of gillnet and trawl effort in the directed and incidental fisheries. Monkfish fishery could be substantially affected by wind lease areas.					
Ecosystem Considerations: Climate		No specific considerations in recent assessments. The assessment acknowledges that larval hatch rate is impacted by temperature and that egg veil and larval/juvenile distribution is impacted by currents during their pelagic phase. The analysis in Framework 8 (2014) indicated that habitat may be impacted by climate change. Hare et al (2016) indicate low vulnerability to climate change (moderate certainty).					
Other Important Considerations/Notes		Questions remain regarding stock structure and age/growth. Research invalidated the growth curved used in the SCALE model in 2016 forcing a return to a survey based assessment. Genetic work funded through the RSA program suggests that there may be a genetic difference within the Southern Area, not at the North/South border, as supposed. Clarification of these issues will affect ACL distribution and sharing among segments of the fishery.					