



February 18, 2022

Mr. Peter Hood
Branch Chief
NOAA Fisheries
Southeast Regional Fisheries Office
263 13th Avenue South
St. Petersburg, FL 33701

RE: Reef Fish Resources of the Gulf of Mexico FMP Amendment 53 Proposed Rule Comments

Dear Mr. Hood:

The Gulf Coast Seafood Alliance (GCSA) is an organization of stakeholders seeking a common goal: equitable and sustainable fisheries along the Gulf Coast for commercial and recreational use alike. Our members make up a diverse group of restaurant owners, chefs, vessel owners, and seafood market owners. GCSA members represent the entire spectrum of commercial fish production in the Gulf of Mexico, from harvest at sea, to processing, and ultimately to the end consumer – shoppers in markets, and diners in restaurants.

The GCSA is a member of Saving Seafood's National Coalition for Fishing Communities (a.k.a. The Saving Seafood Coalition).

Members of the GCSA are deeply disturbed by the Gulf of Mexico Fishery Management Council's Adoption of Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico, which would reallocate 20 percent of the commercial red grouper quota to the recreational sector. If approved, Amendment 53 will deprive the citizens of the United States access to 600,000 pounds of red grouper currently being caught annually by commercial fishermen, and enjoyed by anyone who does not have the ability or opportunity to fish recreationally. It will deprive restaurants of revenue from those landings, negatively affect the tourist industry, and will deprive non-angler citizens from access to Gulf of Mexico seafood resources.

GCSA members are particularly concerned about

1. Anomalies in the record of the National Marine Fisheries Service analysis of the 2017 MRIP Calibration Model Peer Review indicating that the data from Florida private vessels most representative of recreational red grouper catch are not aligned with the macro assumptions used by the Council in the adoption of Amendment 53.
2. Evidence that the Council's analyses to calculate economic value for recreational fisheries included all value added from the time a fish was swimming freely below the waves until it was caught by a recreational fisher's hook, but that Council analyses to

calculate economic value of commercially-caught fish ended with the ex-vessel value at the dock, and ignored all additional value added from the dock to the restaurant plate or the market seafood counter.

Accordingly, the GCSA commissioned Saving Seafood to enlist a group of recognized experts to review the appropriateness of the Council processes leading to the adoption of Amendment 53, the economic and environmental impact studies used to justify Amendment 53, and the legal concerns that would arise from its implementation.

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MRIP Calibration Accuracy

GCSA members are deeply concerned about the accuracy of the data and its analysis and application which led to the Gulf of Mexico Fishery Management Council's adoption of Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico.

The circumstances leading to Amendment 53 arose from changes in the way that recreational fishing catch is estimated. In 1979, the Coastal Household Telephone Survey (CHTS) began to collect data about fishing effort by dialing a random sample of residential households in Hawaii and along the Atlantic and Gulf coasts. This method became less practical over time—due in large part to a decline in the use of landline telephones. Two new surveys were developed with the intention of replacing the CHTS, the Access Point Angler Intercept Survey (APAIS), an in-person intercept survey conducted with recreational anglers as they complete their fishing trips, and the Fishing Effort Survey (FES), a postal mail survey sent to a sample of residential households in coastal states.

Between 2016 and 2017, NOAA Fisheries staff and independent consultants worked to develop a calibration model to re-estimate statistics produced by the CHTS, which would be discontinued.

In 2017, NMFS convened a peer review of the calibration model proposed by the Marine Recreational Information Program (MRIP) to support its planned transition from the legacy CHTS to the new FES. (MRIP Calibration Model Peer Review, June 27-29, 2017 Silver Spring, MD).

Amendment 53 arose from the 61st Southeast Data Assessment and Review (SEDAR 2019) assessment which was completed in September 2019 using updated and revised recreational data from the Marine Recreational Information Program (MRIP), Access Point Angler Intercept Survey (APAIS), and Fishing Effort Survey (FES). The revised estimates of recreational catch and effort were higher than previous estimates based on the Marine Recreational Fisheries Statistics Survey (MRFSS) and the Coastal Household Telephone Survey (CHTS). For example, the estimation of effort from the private recreational mode was three times greater. In January 2020, the Gulf of Mexico Fishery Management Council's Scientific and Statistical Committee (SSC) recognized uncertainty in the estimates of recreational catch (particularly catch in weight).

During the 2017 MRIP Calibration Model Peer Review, NMFS researchers were unable to explain the large difference in MRIP-FES catch estimates using covariates in the statistical calibration model. Reviewer Jason McNamee noted it was impossible to certify the accuracy of the predictions backwards in time. Neither of these difficulties are surprising given the difficulty of retrodicting data going back decades from just a few recent years of calibration data.

Members of the GCSA are concerned about an anomaly we have found in the official record of the 2017 MRIP Calibration Model Peer Review. In examining the records of the estimated retrodicted FES values (the recalculation of the historic numbers) against the previously existing CHTS values, and using what can be called the “Sesame Street analysis,” we see that that *“one of these things is not like the other, one of these things just doesn’t belong.”*

The additional materials from the 2017 MRIP Calibration Model Peer Review panel contains a series of plots of the estimated retrodicted FES values against the previous CHTS values for each of the 17 Atlantic and Gulf Coastal states. An examination of the plot of retrodicted FES values against previous CHTS values for private boat trips by Florida anglers – who represent the overwhelming majority of the Red Grouper recreational fishery – shows that nearly all the pre-existing CHTS values over the period 1986 – 2005 fall inside the confidence interval for the newly-calculated MRIP-FES predictions. The implication of this one-state anomaly is important. It implies that the retrodicted FES values for Florida anglers – who comprise much of the Gulf red grouper recreational fishers – are not statistically different from the previously-existing CHTS estimates.

In other words, **there appears to be insufficient statistical information to determine that historical catch for these anglers was different from the previous estimates, and therefore there is no basis for reallocation.** Because the data used by the NMFS researchers to create their presentations to the 2017 MRIP Calibration Model Peer Review panel were not available to our consulting experts, we were not able to analyze this anomaly beyond the visual evidence presented in the records of the peer review.

Clearly a more formal review and analysis is required.

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Underestimation of Commercial Value of Red Grouper

Members of the GCSA are also concerned that while the Council’s economic analysis counted the value of fish caught by recreational anglers all the way from below the waves to the angler’s hook, the calculation of economic value for the commercial catch is obfuscated by the use of the economist’s term “consumer surplus.”

Consumer surplus is an economist’s term which means the value experienced by a consumer net of the purchase price paid for a good or service. In the analyses done by the Council, the angler’s “consumer surplus” – meaning the total cash value of happiness generated by any fish caught – is prominently featured in the Council FEIS. However, the consumer surplus for the end consumers of commercially harvested red grouper is omitted entirely.

To translate the term “consumer surplus” from terms used by economists to the commonly used vernacular, what this means is that the economic analysis used by the Council includes the value of any fish caught by a recreational angler all the way to the hook of the recreational fisher. But when we examine the application of the same “consumer surplus” concept as it is applied to the commercial fishery in the Council analysis, the calculation ends at the “ex-vessel” value that is paid by a “fish house” or processor at the dock. So, **all of the additional economic value added by the GCSA members who distribute seafood wholesale or own markets, or restaurants is ignored in the Council calculations, as well as the value to the end consumers of seafood.**

There is no justification for this choice, nor even any disclosure that this choice was made.

Brief Overview of Council Procedures Analysis

Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico considers alternatives to revise the Gulf of Mexico red grouper commercial and recreational sector allocation based on updated recreational catch estimates. Amendment 53 consists of two actions (GMFMC 2021). Action 1 would modify the sector allocations, overfishing limit (OFL), acceptable biological catch (ABC), and annual catch limits (ACLs) for red grouper. Action 2 would modify the red grouper Annual Catch Targets (ACTs).

The Gulf of Mexico Fishery Management Council approved Amendment 53 (Red Grouper Allocation and Annual Catch Levels and Targets) to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico with Alternative 3 in Action 1 as the Preferred Alternative. Amendment 53 would reduce the commercial sector’s red grouper allocation from 76% to 59.3% and would increase the recreational sector’s allocation from 24% to 40.7%.

Our analysis of the Council procedures and the ultimately selected alternative demonstrates that Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico:

- does not promote conservation for a highly vulnerable stock.
- does not advance objectives of the Fishery Management Plan.
- ignores factors that would have increased the commercial sectors allocation.
- does not minimize bycatch.
- does not provide information on how NOAA Fisheries recalibrated historical red grouper landings.
- ignored the Council’s allocation policy.
- ignores recommendations of the Reef Fish Advisory Panel and IFQ Advisory Panel.

The complete analysis is attached following this letter.

Brief Overview of Economic Analysis

Our economic analysis found that the Final Environmental Impact Statement (FEIS) contains incomplete, arbitrary and biased analysis – it cannot be relied upon for federal rulemaking until corrections are made.

The key points in our review are as follows:

1. Estimates of angler consumer surplus are arbitrary and overstated.
2. Estimates of consumer surplus from commercial harvest are missing.
3. Estimates of producer surplus from commercial harvest are missing for secondary wholesale, retail and restaurants.
4. Estimates of climate change impacts are missing. Our estimates indicate substantially larger climate change impacts from recreational trips than from commercial harvest.
5. Indirect and induced economic impacts are omitted from the cost-benefit analysis.
6. Objective cost-benefit analysis favors increasing commercial quota allocation.
7. Confidence in the analysis is overstated because estimates of uncertainty are missing.

The economic conclusions drawn in the Final Environmental Impact Statement (FEIS) to support Amendment 53 hinge entirely on the arbitrary assignment of outsize enjoyment benefits to recreational anglers of \$110 per fish. This value is based on a single research study using hypothetical tradeoffs, and it is more than 25x the value determined appropriate by the U.S. Environmental Protection Agency. Without this single arbitrary assumption, the economic analysis in the FEIS would come to the *opposite* conclusion: Amendment 53 should be rejected and, if anything, recreational quota should be reallocated to the commercial fishery.

The economic analysis in the FEIS violates the National Standard 2 requirements for objectivity and for evaluation of uncertainty. The economic analysis contains assumptions and omissions that bias the conclusions drawn, both in favor of recreational anglers and against the commercial fishery. Objective analysis would find larger economic benefits from commercial harvest relative to recreational.

Amendment 53 plans to move quota from a higher valued use to a lower valued use, resulting in economic losses ranging from \$11.62 - \$85.94 *per fish* reallocated from commercial to recreational quota. These numbers would be even larger if any data were available for impacts on end consumers of commercially harvested Red Grouper.

While angler consumer surplus is prominently featured in the FEIS, consumer surplus for end consumers of commercially harvested Red Grouper is omitted entirely. This omitted value may be substantial if any dockside price increases carry through to end consumers according to

typical markup estimates. There is no justification for this choice, nor even any disclosure that the choice was made. Worse, the FEIS purports to consider consumer surplus for commercial harvest when it does not. However, a careful reading of the referenced source material that the “consumers” being considered are the buyers of ex-vessel landings, i.e., processors and dealers. Thus, the consumer surplus presented is in fact only the estimated willingness-to-pay for processors and dealers.

The FEIS also fails to disclose the substantial uncertainty in the economic estimates themselves and the MRIP-FES “retrodictions” used to argue for reallocation. The non-economic argument in the FEIS for reallocating commercial quota to the recreational fishery depends entirely on the claim that 40.7% of Red Grouper landings were recreational landings over the period 1986 – 2005. An objective analysis of uncertainty would need to show that this estimate is statistically significantly different from the historical allocation of 24%. An examination of the retrodicted FES values against the existing CHTS values for private boat trips by Florida anglers from 1986-2005 suggests that there appears to be insufficient statistical information to conclude that historical catch for these anglers was different from the CHTS estimates, and therefore there is no basis for reallocation.

The complete analysis is attached following this letter.

Brief Overview of Legal Issues Analysis

Our legal analysis shows the rule would violate existing law in several ways:

- Under the law, if fishing privileges are allocated to a specific group, that allocation must actually "promote" a conservation purpose. Because the allocation fails to promote the conservation of a fish stock, the rule violates National Standard Four of the Magnuson-Stevens Act. 16 U.S.C. § 1851(a)(4).
- It does not advance the objectives of the Fishery Management Plan to achieve robust fishery reporting and data collection systems across all sectors for monitoring the reef fish fishery, which minimizes scientific, management, and risk uncertainty; to minimize and reduce dead discards; and to promote and maintain accountability in the reef fish fishery. By selecting alternatives that contradict these stated goals the Agency is acting in an arbitrary and unreasonable fashion. *Oceana, Inc. v. Evans*, 2005 WL 555426, *7 (D.D.C. 2005), quoting *City of Alexandria v. Slater*, 198 F.3d 862, 867 (D.C. Cir. 1999).
- National Standard 9, 16 U.S.C. § 1851(a)(9) directs those measures minimize bycatch or mortality of bycatch. Amendment 53 has no measures to reduce bycatch. Rather, the rule would increase bycatch in a directed fishery. In *Coastal Conservation Ass'n v. Gutierrez*, 512 F.Supp.2d 896 (2007), and in *Flaherty v. Bryson*, 850 F.Supp.2d 38 (2012), courts found that NMFS violated the law by not including measures to address the minimization of bycatch.
- 16 U.S.C. § 1851(a)(2) dictates that conservation and management measures shall be based upon the best scientific information available. Yet, as our economic analysis shows, the Environmental Protection Agency’s meta-analysis is far superior than the economic analysis

used to justify Amendment 53 in every objective way. In *Hall v. Evans*, 165 F. Supp. 2d 114 (D.R.I. 2001), the Court concluded that NMFS violated National Standard 2 because the Secretary had not utilized the best scientific information available to the agency.

- The proposed rule for Amendment 53 is similar to the rule promulgated for Amendment 28 to the Reef Fish FMP which was rejected in *Guindon v. Pritzker*, 240 F. Supp. 3d 181 (D.D.C. 2017), in which the Court struck down a reallocation that rewarded the recreational sector for overharvesting as not “fair and equitable”.

The complete analysis is attached following this letter.

The Reviewers

The expert reviewers commissioned by Saving Seafood for GCSA to conduct the procedural, economic and legal issues surrounding Gulf of Mexico Fishery Management Council’s Adoption of Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico are:

- **Dr. Steve Cadrin** has been a stock assessment scientist for over 30 years, previously with the National Marine Fisheries Service’s Northeast Fisheries Science Center in Woods Hole, Massachusetts and the New York Department of Environmental Conservation. He is a professor of Fisheries Oceanography at the University of Massachusetts, Dartmouth, School for Marine Science & Technology. Steve is a recipient of the American Fisheries Society’s Award for Outstanding Marine Fishery Biologist for his sustained excellence in marine fishery biology. He is also a past president of the American Institute of Fisheries Research Biologists. He earned his PhD in Fisheries Science at the University of Rhode Island.
- **Attorney Drew Minkiewicz** is a partner in the Washington DC law office of Kelley Drye & Warren LLP. In his second decade of legal practice, he represents commercial fishing interests and maritime shippers. Prior to joining Kelley Drye, Drew served as senior counsel and staff director of the Subcommittee on Oceans, Atmosphere, Fisheries and Coast Guard of the Senate Committee on Commerce, Science and Transportation under Subcommittee Chair Senator Olympia Snowe (R-ME) and under Senator John McCain (R-AZ) during his full committee chairmanship.
- **Dr. Tom Sproul** is Associate Professor of Environmental and Natural Resource Economics at the University of Rhode Island, who represents Rhode Island on the Committee for Economics and Social Science at the Atlantic States Marine Fisheries Commission. His research focuses on risk modeling and behavioral economics, with applications in agriculture and fisheries. His current research and grants include statistical and economic modeling pertaining to fisheries and offshore wind. He earned his Ph.D. in Agricultural & Resource Economics at the University of California, Berkeley.
- **Aubrey Ellertson Church** is a graduate student at the University of Massachusetts School of Marine Science and Technology, and a full-time research biologist at the Commercial Fisheries Research Foundation in Saunderstown, Rhode Island.

Conclusion

If approved, the Council's action will deprive the citizens of the United States access to 600,000 pounds of red grouper this year currently being caught by commercial fishermen, and enjoyed by anyone who does not have the ability or opportunity to fish recreationally. It will also deprive restaurants of revenue from those landings, and will block both local residents and tourists from accessing our Gulf seafood resources.

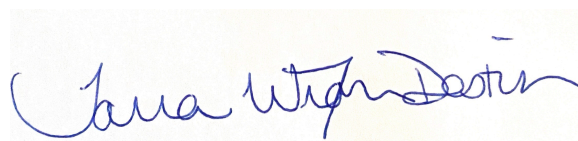
Of America's approximately 330 million citizens, only 38 million are holders of recreational fishing licenses, tags, permits and stamps, according to the U.S. Fish & Wildlife Service. The 11 percent of Americans who enjoy fishing recreationally, who can afford the gear, boats and charters needed to participate in this sport, certainly have the right to access this resource, but they should not have the right to monopolize the resource.

The other 89 percent of Americans nationwide who do not hold fishing licenses, tags, permits or stamps also have the right to access domestic seafood resources, which they currently do through the labor of our commercial fishermen and distributors, who supply wild-caught seafood to their markets and favorite restaurants.

Commercial fishing is just as important to the Gulf tourist economy as recreational fishing, even though the benefits are often overlooked. If commercial fishermen can't catch enough local species like grouper, the impacts will ripple through the critically important restaurant industry. Less grouper to catch means less grouper for restaurants, and that will inevitably lead to higher prices at the table.

For all of the reasons noted above and in the detailed analyses attached, we respectfully ask Commerce Secretary Gina Raimondo not to approve the request of the Gulf of Mexico Fishery Management Council and we ask Assistant Secretary of Commerce for Oceans and Atmosphere, and Deputy NOAA Administrator Janet Coit to review the analyses of our review team in her recommendations to the Secretary.

Sincerely,



Tarra Wixom Destin
Executive Director
Gulf Coast Seafood Alliance



Robert Vanasse
Executive Director
Saving Seafood

Attachments:

- A. Review of Council Process for Red Grouper Allocations and Annual Catch Levels and Targets (Comments of Aubrey Ellertson Church and Dr. Steven X. Cadrin)
- B. Economic Analysis (Comments of Dr. Thomas Sproul)
- C. Legal Analysis (Comments of GCSA Counsel Andrew E. Minkiewicz)

**Review of Council Process for Red Grouper Allocations and Annual Catch Levels and Targets
Final Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of
Mexico**

Aubrey Ellertson Church, University of Massachusetts Dartmouth School for Marine Science &
Technology

Steven X. Cadrin, Ph.D., Department of Fisheries Oceanography, School for Marine Science & Technology
February 14, 2022

1. History

The 61st Southeast Data Assessment and Review (SEDAR 2019) assessment was completed in September 2019 using updated and revised recreational data from the Marine Recreational Information Program (MRIP), Access Point Angler Intercept Survey (APAIS), and Fishing Effort Survey (FES). The revised estimates of recreational catch and effort were higher than previous estimates based on the Marine Recreational Fisheries Statistics Survey (MRFSS) and the Coastal Household Telephone Survey (CHTS). For example, the estimation of effort from the private recreational mode was three times greater. In January 2020, the Gulf of Mexico Fishery Management Council's Scientific and Statistical Committee (SSC) recognized uncertainty in the estimates of recreational catch (particularly catch in weight) but concluded that the SEDAR 61 assessment represented the best available science.

2. Background on the issue/problem

Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico considers alternatives to revise the Gulf of Mexico red grouper commercial and recreational sector allocation based on updated recreational catch estimates. Amendment 53 consists of two actions (GMFMC 2021). Action 1 would modify the sector allocations, overfishing limit (OFL), acceptable biological catch (ABC), and annual catch limits (ACLs) for red grouper. Action 2 would modify the red grouper Annual Catch Targets (ACTs).

The Gulf of Mexico Fishery Management Council approved Amendment 53 (Red Grouper Allocation and Annual Catch Levels and Targets) to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico with Alternative 3 in Action 1 as the Preferred Alternative. Amendment 53 would reduce the commercial sector's red grouper allocation from 76% to 59.3% and would increase the recreational sector's allocation from 24% to 40.7%. Under Action 1, Alternative 2 (keeping status quo allocations of 76:24), the commercial sectors ACL would be 3.72 million pounds. Under Alternative 3, the commercial sector's ACL will be 2.53 million pounds, or a reduction of 1.19 million pounds (32% decrease for commercial sector). The Secretary of Commerce has three options with respect to Amendment 53: to approve, to disapprove, or to partially disapprove the Gulf of Mexico Council actions.

In summary, Amendment 53 to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico:

- does not promote conservation for a highly vulnerable stock,
- does not advance objectives of the Fishery Management Plan,
- ignores factors that would have increased the commercial sectors allocation,
- does not minimize bycatch,
- does not provide information on how NOAA Fisheries recalibrated historical red grouper landings,
- ignored the Council's allocation policy, and
- ignores recommendations of the reef Fish Advisory Panel and IFQ Advisory Panel.

3. Major Problems Identified in the Minority Report from voting members of the Gulf of Mexico Fishery Management Council (Bosarge et al. 2021)
- A) “Amendment 53 violates MSA National Standard 4 because it does not promote conservation and is not fair and equitable.”
- a. “Reallocation reduces conservation for a highly vulnerable stock” because the SEDAR 61 stock assessment does not account for a recent fish kill and increased recreational allocation will increase uncertainty and risk of overfishing.
- b. Reallocation is not fair and equitable because:
- i. Amendment 53 does not advance objectives of the Fishery Management Plan;
- ii. Amendment 53 unfairly forces the commercial sector to subsidize recreational dead discards; and
- iii. Amendment 53 unfairly ignores factors that would have increased the commercial sector’s allocation.
- B) Amendment 53 violates MSA National Standard 9 because it does not minimize bycatch to the extent practicable.
- C) Critical information about how NOAA Fisheries recalibrated historical red grouper landings estimates was not made available to the Gulf Council or the public as required by MSA section 302(i)(6) and National Standard 2 Guidelines.
- D) The Gulf Council failed to follow its Allocation Policy.

Details and supporting information for Issues A-D from the Minority Report (Bosarge et al. 2021):

A) National Standard 4 – Allocations

- Fair and equitable to all such fishermen
- Reasonably calculated to promote conservation
- Carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges
- <https://www.law.cornell.edu/cfr/text/50/600.325>

Reallocation does not promote conservation for a highly vulnerable stock

- Red Grouper Stock Assessment (SEDAR 2019) found the biomass of red grouper to be the lowest point on record (Figure 4.41, p. 141). The determination of ‘not overfished’ is based on revised definition of the minimum stock size threshold. According to the previously defined threshold, the stock would be overfished (Figure 5.3, p. 246).
- Under Preferred Alternative 3, more fish would be allocated to the recreational sector than the other alternatives. “Allocating a greater percentage of the ACL to a sector that has more uncertainty in landings, (i.e., the recreational sector) which is more likely to result in an overfishing or eventual overfished status of Gulf red grouper.” – Amendment 53 p. xxiii
- “Total landings have to be constrained more to account for the greater number of dead discards from the recreational red grouper fishing estimated by the MRIP-FES. As described in Appendix B, the recreational sector discards are an order of magnitude greater than the commercial sector.” (Amendment 53, pg. xiv)
- Amendment 53 would result in more dead discards by the recreational sector (“640,00 lbs”) – Minority Report

Reallocation does not advance objectives of the Fishery Management Plan

- National Standard 4 states allocation has to be “fair and equitable to all U.S. fishermen.”
- Amendment 53 does not advance the objectives of the Fishery Management Plan specifically objectives 1, 2, 4, 5, 6,9, and 12 (Bullet # 5, Reef Fish Fishery Management Plan Objectives listed).
- Amendment 53 does not explain how it helps to achieve Optimum Yield.
 - The Response to Comments from the Public on the DEIS for Amendment 53, pg. 284-294 claims that "The allocation in Preferred Alternative 3 does not substantially increase the risk of overfishing or prevent achieving OY. The risk of overfishing under **Alternatives 2-5** in Action 1 is the same". This rebuttal is based on the Acceptable Biological Catch control rule maintaining the same risk of overfishing (P*). However, the increased uncertainty in recreational catch, discards and dead discards are not entirely accounted for in the ABC control rule, and recent history confirms that there are inadequate controls to the recreational fleet exceeding its allocation.
- Amendment 53 reduces the commercial sectors Annual Catch Limit (ACL) to cover increased “dead discards from the recreational red grouper fishing estimated by the MRIP-FES” sector that is a direct result of reallocation (Amendment 53, p. xiv). The stock assessment and allocation decision involve a reduction in commercial catch to allow for recreational discards and the lack of controls on recreational mortality that occur during a recreational season closure when the ACL is met.
- “The commercial sector is fully accountable and operates under an Individual Fishing Quota (IFQ) program that was designed to reduce commercial sector discards” (Amendment 53, p. 2).
 - The IFQ program and catch shares among shareholders prevent fishermen from harvesting more than their individual allocation. The commercial fishing sector has gear restrictions, seasonal management measures and minimum size limits (Amendment 53, p. 203). The commercial sector has census-level mandatory real-time reporting of their landings, but recreational catch is estimated based on model extrapolations of self-reported data by a random subset of angler’s months after fishing trip has finished. It is unreasonable to force the commercial sector to pay for recreational sector dead discards that should instead be deducted from recreational sectors ACL, and there is no incentive for the recreational sector to reduce its discard rate.

Ignores factors that would have increased the commercial sectors allocation

- “No effort was made to determine what the historical sector ACLs would have been if the Gulf Council had been estimating recreational landings using FES at the time. Because recreational landings estimates using FES are higher, relying on those estimates for management would have shown a more productive stock and generated higher historical ACLs for *both* sectors. Thus, commercial sector landings would have been higher during that time period as well, had FES been available for management purposes.” (Minority Report) The previous allocation decision by Amendment 30B was based on meeting management objectives in the context of the available information at that time. Revising the allocation decision by simply recalculating the proportion of landings from the same timeframe as used in Amendment 30B ignores the revised perspectives of stock productivity and optimum yield.

B) National Standard 9 – Bycatch

- <https://www.law.cornell.edu/cfr/text/50/600.350>

- MSA defines bycatch as “fish which are harvested in a fishery, but which are not sold or kept for personal use, and includes economic discards and regulatory discards.”
- Therefore, dead discards by recreational anglers qualifies as bycatch since these are fish harvested but not kept for personal use.
- National Standard 9: bycatch can “increase... the uncertainty concerning total fishing-related mortality;” and second, bycatch “may also preclude other more productive uses of fishery resources.”

Amendment 53 does not minimize bycatch

- “Red grouper recreational discard estimates averaged 4.25 million fish from 1993 to 2017, with a low of 1.53 million fish in 1996 and a peak of 8.10 million fish in 2004.”- Amendment 53 Table 3.1.5 (p. 36). Estimates of recreational discards for 2001-2017 were almost twice (182%) the estimates of recreational landings, and discard estimates for 2008-2011 were almost four times (395%) greater than recreational landings (Table 1 below). Increasing the allocation to this high-bycatch sector violated National Standard 9.
 - “The recreational fishery discards substantially more fish than the commercial fishery, averaging 4.14 million fish per year, versus approximately 600,000 fish/year in the commercial fishery. This difference is especially pronounced in the most recent 5 years (2013-2017), where commercial discards (~320k/year) have been less than a tenth of recreational discard (~3.71 million/year). Thus, despite a higher discard mortality rate in the commercial fishery (due largely to the bottom longline fishery), the recreational sector is responsible for more discards and more dead discards.”- Amendment 53, Appendix B, p. 200
- By comparison, commercial sector discards are an order of magnitude lower
 - “Commercial longline fleet discards averaged about 465,000 fish from 1993-2017, with a low 153,000 fish in 2009 and a peak of 878,000 fish in 1997. Commercial vertical line fleet discards of red grouper averaged about 134,000 fish from 1993 -2017 with a low of about 49,000 fish in 1995 and a peak of over 290,000 fish in 2011 (Table 3.1.3).”- Amendment 53, p. 33
 - Estimates of commercial discards for 2001-2017 were 11% of the estimates of commercial landings, and discard estimates for 2008-2011 were 12% of commercial landings (Table 2 below).
 - For example, for every 100 pounds of recreational landings, almost 200 fish are discarded and about 20 are dead. By comparison, for every 100 pounds of commercial landings, approximately ten fish are discarded and four of those are dead (Table 1 & 2 below), documenting a fishery with a much lower bycatch rate.

C) NOAA Fisheries Recalibration of Historical Red Grouper Landings Estimates

- In the minority report they state “to our knowledge no answers were forthcoming to the Council during the development of Amendment 53. We are not aware of publicly available data or information that would permit someone to duplicate NOAA Fisheries’ calibration methodology for red grouper.”
- National Standard 2- Scientific Information (50 CFR § 600.315.): “The Magnuson Stevens Act provides broad public and stakeholder access to the fishery conservation and management

process, including access to the scientific information upon which the process and management measures are based.”

- “Data and procedures used to produce the scientific information” must be “documented in sufficient detail to allow reproduction of the analysis by others with an acceptable degree of precision,” which is necessary “to conduct a thorough review.” (50 CFR § 600.315 (a)(6) (vi A)
- In the Summary Report of Reef Fish Advisory Panel, Gulf of Mexico Fishery Management Council (Oct 6, 2020) the AP reported concerns expressed by members of the Gulf Council, and Gulf states about the use of recreational data generated from the Marine Recreational Information Program’s (MRIP) Fishing Effort Survey (FES) - Minority Report Attachments
- One peer reviewer of NOAA Fisheries’ calibration model, McNamee, acknowledged that it “was difficult to judge whether this approach was truly superior to other potential approaches that could have been used. For instance, one of the hypotheses of why the CHTS has become unreliable is that there is a change in behavior of anglers with regard to the use of caller ID and switching to cell phones from landline telephone systems. This effect could be a time trending effect, and there are state space modeling approaches that can estimate time trending effects (Newman et al 2014) and there are also Bayesian hierarchical techniques (Gelman et al 2013) that can function in this same way to better account for and quantify process errors that may occur within modeling frameworks. It appeared that at least some of these types of approaches were investigated by the researchers, however this information came out during discussion so was not formally presented to the reviewers nor included in any of the pre-meeting materials, making it difficult for reviewers to judge for themselves the logic of modeling approach used by the researchers.”-McNamee (2017). The review of the MRIP FES Calibration took place at Sheraton Silver Spring, Silver Spring, MD on June 27-29, 2017 (Rago et al. 2017).
- McNamee (2017) continued to point out that an important concern is the result of the calibration increases effort by a large margin. “This will have major implications on the outcome of stock assessment information, and as importantly, this result will impact many facets of management such as proportion of harvest across fishing modes and may have impacts to allocations of important recreational species amongst states.”
- Another area of weakness found during the review was the approach used in developing the proposed FES/CHTS calibration model. “It was apparent that the researchers did rigorous internal model testing to find the best fitting model given the data that they investigated, which was documented during the presentation and was covered in the working paper. What was not apparent was how the researchers ended up at their preferred approach, the Fay-Herriot model.... The researchers did verbally explain to the reviewers that this approach vetting did occur, however, given that this was a direct TOR for the review workshop, it would have been preferable to have had more information on this part of the research project.” – McNamee (2017)
- Finally, three peer reviewers of NOAA Fisheries’ calibration model acknowledged that it is not possible to evaluate the accuracy of the revised recreational landings estimates (Term of Reference 1e for the peer review, Rago et al. 2017):
 - “There was no information provided with regard to evaluating accuracy, nor would this be possible in the context of the information available as this whole project centers around determining differences in self-reported data.”- Jason McNamee
 - “Because both the CHTS and FES effort estimates are based on self-reported information that has never been externally validated, the accuracy of any of the estimates cannot be ascertained.” – Frederic M Serchuk

- “[Term of Reference 1e for the peer review] seeks the panel to evaluate accuracy of the estimates, when in fact that is not possible...Anglers self-report their trip numbers in these surveys and there is no external validation of effort. The anglers’ trips are not counted while they are fishing or when they complete their trip on site, but rather they must recall the number of trips that they took within the past two months...To determine accuracy, a validation study would need to be devised that paired an onsite validation with the offsite survey.”- Cynthia M. Jones

D) Gulf Council Ignored its Allocation Policy

- The Minority Report recognized that an allocation review should have been triggered when the Council recalibrated historical red grouper recreational landings data estimates. However, an allocation review was not documented, and the Council proceeded directly to the FMP amendment.
- "In April 2019, the Council selected time-based criteria as its primary allocation review trigger bolstered by general monitoring of indicators for reallocation justification through the Council’s general deliberative process including public input channels as a secondary trigger (Appendix F).” -Amendment 53, p. 2
- “In addition to the allocation reviews scheduled based on the review triggers selected above, the Council may initiate supplemental allocation review at any time. For example, the Council could initiate an allocation review should relevant new information, e.g., data recalibration, be made available.” – Amendment 53, p. 2
 - The review of the recreational and commercial allocations of red grouper has its next scheduled review in April 2026 (interval of 7 years)
- An allocation review should determine if the FMP’s goals and objectives are being met by an existing allocation and if not, management alternatives are developed to adjust the allocation to better achieve FMP goals and objectives.

4. Reef Fish Advisory Panel and IFQ Advisory Panel did not support the reallocation

The Gulf Council’s Reef Fish Advisory Panel (AP) and Individual Fishing Quota (IFQ) Advisory Panel did not support the reallocation

- Summary Report of Reef Fish Advisory Panel, Gulf of Mexico Fishery Management Council Webinar Meeting (October 6, 2020)
 - “An AP member stated that, within the AP, there was little confidence in MRIP-FES as the best scientific information available.”
 - “Resolution: Whereas we the Reef Fish AP have thoroughly considered all the options in Action 1 of Reef Fish Amendment 53 presented to us, and whereas we have been unable to reach a consensus due to a lack of confidence in the recreational data used to inform the proposed allocations in the alternatives. Therefore, be it resolved the Reef Fish AP cannot recommend any of the proposed alternatives in Action 1.”
- Summary Report of Ad Hoc Red Snapper/Grouper-Tilefish IFQ Advisory Panel, Gulf of Mexico Fishery Management Council Webinar Meeting (June 2, 2021).
 - “AP members discussed red grouper reallocation alternatives included in Reef Fish Amendment 53 and noted that red grouper is a key species to the survival of several fishermen.”

- Motion: The AH RS GT IFQ AP supports Reef Fish Amendment 53 Action 1 Alternative 2 which would maintain the sector allocations of the total ACL as 76% commercial and 24% recreational and revise the OFL and ABC as recommended by the SSC.”

5. New Reef Fish Fishery Management Plan Objectives:

“The new Reef Fish FMP objectives are as follows:

1. To prevent overfishing and rebuild overfished stocks.
2. To achieve robust fishery reporting and data collection systems across all sectors for monitoring the reef fish fishery, which minimizes scientific, management, and risk uncertainty.
3. To conserve and protect reef fish habitat.
4. To minimize conflicts between user groups.
5. To minimize and reduce dead discards.
6. To manage Gulf stocks at OY as defined in Magnuson-Stevens Fishery Conservation Management Act.
7. To revise the definition of the fishery management unit and fishery to reflect the current species composition of the reef fish fishery.
8. To encourage and periodically review research on the efficacy of artificial reefs for management purposes.
9. To promote stability in the fishery by allowing for enhanced fishery flexibility and increasing fishing opportunities to the extent practicable.
10. To avoid to the extent practical the “derby” type fishing season.
11. To provide for cost-effective and enforceable management of the fishery.
12. To promote and maintain accountability in the reef fish fishery.”

Source: Amendment 53- Red Grouper Allocations and Annual Catch Levels and Targets, Ch. 1 Introduction p. 8

Conclusion

For the reasons above, we respectfully disagree with the Gulf Council’s decision to adopt Amendment 53 to the Gulf of Mexico Reef Fish FMP and therefore urge the Secretary of Commerce to reject Amendment 53.

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Table 1. A summary of the Red grouper landings (gutted weight), discards (number of fish), calculated discard rate (landings (gutted weight)/ discards (numbers), and calculated dead discard rate for the recreational sector from 2001-2017. Source: Amendment 53 Tables 3.1.2, 3.1.3, 3.1.5, and 3.1.6. The most recent red grouper stock assessment (SEDAR 61 2019) assumed a recreational discard mortality at 11.6%.

	recreational			
	landings	discards	discard rate	dead discard rate
2001	2,435,456	3,847,755	158%	18%
2002	3,172,348	4,201,116	132%	15%
2003	2,201,496	4,232,515	192%	22%
2004	7,983,239	8,097,486	101%	12%
2005	3,081,979	3,042,235	99%	11%
2006	2,655,065	2,376,307	90%	10%
2007	2,031,867	1,728,971	85%	10%
2008	1,604,398	6,752,221	421%	49%
2009	1,609,247	6,828,147	424%	49%
2010	1,963,762	5,995,821	305%	35%
2011	1,534,113	6,589,384	430%	50%
2012	4,131,722	4,974,805	120%	14%
2013	4,990,310	5,628,106	113%	13%
2014	5,368,916	4,813,049	90%	10%
2015	3,790,853	2,952,094	78%	9%
2016	2,632,718	2,565,618	97%	11%
2017	1,692,428	2,576,189	152%	18%
2001-2017 average			182%	21%
2008-2011 average			395%	46%

Table 2. A summary of the Red grouper landings (gutted weight), discards (number of fish), calculated discard rate (landings (gutted weight)/ discards (numbers)), and calculated dead discard rate for the commercial sector from 2001-2017. Source: Amendment 53 Tables 3.1.2, 3.1.3, 3.1.5, and 3.1.6. The most recent red grouper stock assessment (SEDAR 61 2019) assumed a discard mortality rate of 41.5% for the commercial bottom longline fleet, and 19.0% for the commercial vertical line sector.

	commercial			
	landings	discards	discard rate	dead discard rate
2001	5,802,442	798,925	14%	5%
2002	5,791,795	730,954	13%	5%
2003	4,832,294	755,013	16%	6%
2004	5,635,577	719,641	13%	5%
2005	5,380,603	574,651	11%	4%
2006	5,109,824	652,771	13%	5%
2007	3,650,777	556,583	15%	5%
2008	4,748,224	608,191	13%	5%
2009	3,698,227	372,437	10%	3%
2010	2,910,970	376,254	13%	4%
2011	4,783,668	637,402	13%	4%
2012	5,219,133	581,639	11%	4%
2013	4,599,001	306,266	7%	2%
2014	5,601,905	384,108	7%	3%
2015	4,798,007	282,295	6%	2%
2016	4,497,582	339,171	8%	3%
2017	3,328,271	287,704	9%	3%
2001-2017 average			11%	4%
2008-2011 average			12%	4%

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Public Comment on Amendment 53, Docket NOAA-NMFS-2021-0098

February 17, 2022

Peter Hood
NMFS Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701

Dear Mr. Hood:

The economic conclusions drawn in the Final Environmental Impact Statement (FEIS) to support Amendment 53 hinge entirely on the arbitrary assignment of outsize enjoyment benefits to recreational anglers of \$110 per fish. This value is based on a single research study using hypothetical tradeoffs, and it is more than 25x the value determined appropriate by the U.S. Environmental Protection Agency. Without this single arbitrary assumption, the economic analysis in the FEIS would come to the *opposite* conclusion: Amendment 53 should be rejected and, if anything, recreational quota should be reallocated to the commercial fishery.

I believe the economic analysis in the FEIS violates the National Standard 2 requirements for objectivity and for evaluation of uncertainty. The economic analysis contains assumptions and omissions that bias the conclusions drawn, both in favor of recreational anglers and against the commercial fishery. Objective analysis would find larger economic benefits from commercial harvest relative to recreational. The FEIS also fails to disclose the substantial uncertainty in the economic estimates themselves and the MRIP-FES "retrodictions" used to argue for reallocation.

My analysis suggests that Amendment 53 plans to move quota from a higher valued use to a lower valued use, resulting in economic losses ranging from \$11.62 - \$85.94 *per fish* reallocated from commercial to recreational quota. These numbers would be even larger if any data were available for impacts on end consumers of commercially harvested Red Grouper.

For these reasons, I urge NOAA to reject Amendment 53.

Review Summary

In my review, I summarize the economic analysis in the FEIS, identify arbitrary assumptions and omissions that bias the analysis and its conclusions, and attempt to correct the record.¹ The economic analysis in the FEIS contains a pattern of arbitrary assumptions and omissions that bias the cost-benefit analysis (found in FEIS Table 4.1.3.8) against commercial fishing and in favor of recreational fishing. Items 1 – 5 below are all examples of judgment calls that serve to bias the cost-benefit analysis. Item 7 addresses undisclosed uncertainty, which biases the perceived degree of confidence that can be placed on the conclusions drawn.

Item 6 provides an example of cost-benefit analysis conducted when these elements of bias are addressed. Once they are addressed, an objective economic cost-benefit analysis *reverses* the conclusion drawn in the FEIS. That is, there will be a net economic loss if commercial quota is reallocated to recreational use as proposed in Amendment 53.

The key points in my review are as follows:²

1. Estimates of angler consumer surplus are arbitrary and overstated.
2. Estimates of consumer surplus from commercial harvest are missing.
3. Estimates of producer surplus from commercial harvest are missing for secondary wholesale, retail and restaurants.
4. Estimates of climate change impacts are missing. My estimates indicate substantially larger climate change impacts from recreational trips than from commercial harvest.
5. Indirect and induced economic impacts are omitted from the cost-benefit analysis.
6. Objective cost-benefit analysis favors increasing commercial quota allocation.
7. Confidence in the analysis is overstated because estimates of uncertainty are missing.

¹ I have been retained by the Gulf Coast Seafood Alliance to conduct a review of the economic analysis and conclusions found in the 9/24/2021 Final Environmental Impact Statement document posted on the NOAA Fisheries Amendment 53 website. I hold a Ph.D. in Agricultural & Resource Economics from the University of California, Berkeley, and a tenured faculty position in Environmental & Natural Resource Economics at the University of Rhode Island. I also serve on the Economics and Social Sciences Committee for the Atlantic States Marine Fisheries Commission. *Nonetheless, I conducted my review as a private consultant and these comments are my own - they do not represent opinions or official positions of the above organizations.*

² The scope of this review was limited in nature. There are many additional important points regarding incomplete or inaccurate economic analysis in the FEIS, but I could not cover all of them here. Thus, omission of those other points from this review should not be construed as evidence of my endorsement of economic assumptions made in the FEIS.

Estimates of angler consumer surplus are arbitrary and overstated.

Consumer surplus refers to the cash value of enjoyment benefit to end consumers. Unlike business profits, the value to consumers (their willingness-to-pay, or WTP) cannot be directly observed and must be estimated. This is further complicated in the case of valuing an extra fish caught by recreational anglers because they don't pay for the fish itself – the extra fish caught is a non-market good whose value must be estimated from surrounding expenditures.

Faced with these considerations for rulemaking under Section 316(b) of the Clean Water Act, the United States Environmental Protection Agency conducted an extensive benefits meta-analysis to estimate the marginal recreational WTP for catching an additional fish. The meta-analysis combined multiple studies over varying methodologies, species and regions (USEPA, 2014). To my knowledge this is the most comprehensive study of recreational values conducted by a US federal agency, but it appears the authors of the FEIS are unaware of its existence.

For the species group including Red Grouper in the Gulf of Mexico (“other saltwater”), USEPA reported an estimated value of \$2.91 per fish (\$2011) with a lower bound of \$2.23 and an upper bound of \$3.78 per fish. I have adjusted these figures to current 2021 dollars using the Consumer Price Index (CPI) sourced from the Minneapolis Fed (FRBM, 2022). I also used the modeling adjustments in USEPA (2014) to adjust the estimates upward for the lower share of shore trips for Red Grouper (5.5% per FEIS Table 3.4.2.2) and the lower baseline catch rate per trip (0.94 per FEIS Tables 3.1.5 and 3.4.2.2).³ The resulting estimates are \$3.82 per fish with a lower bound of \$2.93 and an upper bound of \$4.96 per fish.

The FEIS assigns a recreational value of \$110 per fish (\$2018), or \$116.75 per fish in current (2021) dollars. This value is more than 25x the value considered appropriate by USEPA, but this comparison is neither acknowledged nor addressed. Instead, the FEIS relies only on a single “stated preference” study (Carter and Liese, 2012) where WTP is estimated from *hypothetical* choices presented in a survey, in which no real money transactions occurred. Stated preference studies have known challenges, including the potential for hypothetical bias, or the tendency of survey respondents to overstate their WTP when no real money is at stake (see Freeman, Herriges and Kling, 2014, Chapter 12 for a thorough discussion).

Assigning arbitrary, large consumer surplus to recreational harvest has a substantial effect on the cost-benefit analysis in FEIS Table 4.1.3.8 – it biases the analysis in favor of reallocating commercial quota to recreational anglers.

Estimates of consumer surplus from commercial harvest are missing.

While angler consumer surplus is prominently featured in the FEIS, consumer surplus for end consumers of commercially harvested Red Grouper is omitted entirely. This omitted value may be

³ Recreational harvest estimates were converted from pounds gutted weight per trip (targeting Red Grouper) to fish per trip using the conversion of 6.20 lbs. gutted weight per fish, sourced from FEIS pp.101-102, which indicates 6.51 lbs. per fish (whole weight) and a conversion factor of 1.05 from gutted weight to whole weight.

substantial if any dockside price increases carry through to end consumers according to typical markup estimates.⁴

I am aware of no justification for this choice, nor even any disclosure that the choice was made. Worse, the FEIS purports to consider consumer surplus for commercial harvest when it does not. Table 4.1.3.1 in the FEIS purports to show consumer surplus for the commercial sector. However, a careful reading of the referenced source material (Keithly and Tabarestani, 2018) clarifies that the “consumers” being considered are the buyers of ex-vessel landings, i.e., processors and dealers. Thus, the consumer surplus presented is in fact only the estimated willingness-to-pay for processors and dealers – in other words, it is the producer surplus for another component of the commercial fisheries value chain. This important fact is not disclosed: the FEIS uses the same terminology to describe this “consumer surplus” as to describe that of recreational anglers.

Omitting the consumer surplus from commercial harvest is equivalent to assigning it a \$0 value in the cost-benefit analysis in FEIS Table 4.1.3.8 – this biases the analysis in favor of reallocating commercial quota to recreational anglers.

Estimates of producer surplus from commercial harvest are missing for secondary wholesale, retail and restaurants.

The expected loss of producer surplus for commercial harvesters is the only commercial producer surplus reported as such in the FEIS (see Table 4.1.3.2), though as described in the preceding section, the estimated commercial *consumer surplus* lost (Table 4.1.3.1) is in fact an estimate of lost producer surplus for processors and dealers. Still, there is no estimation of producer surplus losses further up the value chain: secondary wholesalers and seafood retailers, such as fish markets, grocery stores and restaurants, are omitted from the analysis. These producers are recognized in the economic impact analysis for commercial fishing (Table 3.4.1.24), but their omission from the producer surplus analysis is not discussed in the FEIS.

Omitting the producer surplus from commercial harvest for these sectors is equivalent to assigning it a \$0 value in the cost-benefit analysis in FEIS Table 4.1.3.8 – this biases the analysis in favor of reallocating commercial quota to recreational anglers.

Estimates of climate change impacts are missing. My estimates indicate substantially larger climate change impacts from recreational trips than from commercial harvest.

The effects of greenhouse gas emissions are discussed in the FEIS only in a single paragraph with an accompanying table (Table 3.2.1) that shows commercial and recreational emissions being about the same, and both being a small factor overall in the Gulf of Mexico. This cursory treatment fails to assess the excessive use of fuel per fish harvested in the recreational sector.

While a full treatment is beyond the scope of my review, I conducted a quick, back-of-the-envelope analysis to estimate the difference in climate change impacts per fish between the

⁴ The National Marine Fisheries Service “Fisheries of the United States 2017” (NMFS, 2018) gives commercial supply chain markup estimates on p.122: 80% by dealers and processors, 63% by wholesalers, and a further 33% by retail markets or a further 182% by restaurants.

commercial and recreational fisheries. For the commercial sector, I assumed all fuel was diesel (22.46 lbs. CO₂/gal.) and used the Landings/Fuel Use productivity measure of 11 lbs./gal. from FEIS Table 3.4.1.21 as well as 2014-2018 average harvest from FEIS Table 3.4.1.20. For the recreational sector, I assumed all fuel was gasoline (18.74 lbs. CO₂/gal.) and used average recreational trip counts targeting Red Grouper for 2014-2018 from FEIS Table 3.4.2.4 and average recreational harvest for 2014-2018 from FEIS Table 3.1.5.

Recreational fuel use per trip was estimated by backing out gallons from fuel expenditures given by Gentner (2009) and Charles (2005), using current-year gasoline prices in Florida and Texas (USEIA, 2022a; USEIA 2022b), respectively.⁵ Greenhouse gas estimates (USEIA, 2021) and fuel prices were sourced from the U.S. Energy Information Administration website, and social cost of carbon (SCC) estimates were sourced from the US government Interagency Working Group on Social Cost of Greenhouse Gases (IWG, 2021)⁶ and converted to 2021 dollars using CPI.

Table 1 presents the total CO₂ and social cost estimates by fishery. Both low and high scenarios are presented for recreational, corresponding to 8.85 gal./trip (derived from Gentner, 2009) and 23.59 gal./trip (derived from Charles, 2005), respectively.

Table 1: Total Social Cost of Carbon (SCC) Estimates by Fishery

Fishery	Lbs. Harvest	Trips	Fuel Use (Gal.)	MT CO ₂	SCC (\$2021)
Commercial	4,065,841		369,622	3,766	\$209,293
Recreational (L)	3,107,672	530,870	4,698,764	39,941	\$2,219,936
Recreational (H)	3,107,672	530,870	12,522,415	106,445	\$5,916,228

Table 2 summarizes the social cost of carbon by fishery per pound of harvest (gutted weight) and per fish (using 6.20 lbs./fish gutted weight from FEIS pp.101-102). While these are only rough, back-of-the-envelope calculations, they show that social costs of carbon may be substantial for the recreational fishery, and they appear to be significantly larger than the social costs from emissions in the commercial fishery.

Table 2: Per Pound and Per Fish Social Cost of Carbon (SCC) Estimates by Fishery (\$2021)

Fishery	Lbs. Harvest	Total SCC	SCC Per Lb.	SCC Per Fish
Commercial	4,065,841	209,293	\$0.05	\$0.32
Recreational (L)	3,107,672	2,219,936	\$0.71	\$4.43
Recreational (H)	3,107,672	5,916,228	\$1.90	\$11.80

The estimates are not adjusted to apportion fuel use across species caught in the same trip, so they are only proportionally accurate to that extent that Red Grouper is a similar share of the per-trip catch for both commercial and recreational fishing. Additionally, if Red Grouper is a small share

⁵ I refer to Gentner (2009) only to obtain fuel-use estimates. I do not endorse the economic analysis therein.

⁶ These social cost of carbon estimates are not new, they are simply the IWG (2016) estimates, updated for inflation to 2020 dollars. Thus, these estimates were available at the time analysis began for the FEIS.

of per-trip catch in both fisheries then the amounts would need to be scaled down accordingly. Given these caveats, the differences between these numbers can be interpreted as an estimate of the social cost of carbon from reallocating commercial quota to recreational. The resulting social costs range from \$0.66 to \$1.85 per pound, or from \$4.11 to \$11.48 per fish.

Omitting the larger climate change impacts from recreational fuel use is equivalent to assigning them a \$0 value in the cost-benefit analysis in FEIS Table 4.1.3.8 - this biases the analysis in favor of reallocating commercial quota to recreational anglers.

Indirect and induced economic impacts are omitted from the cost-benefit analysis.

The FEIS identifies indirect economic impacts (on suppliers) and induced economic impacts (spending of increased income) from commercial and recreational fishing in Tables 3.4.1.24 and 3.4.2.9. The FEIS correctly notes that these impact estimates do not account for the possibility of substitute purchases or activities and thus cannot be interpreted as measuring the impacts following from reallocation of quota as proposed in Amendment 53. However, these impacts are reasonably expected to occur, it is only their magnitude that is in doubt.⁷ The economic impact estimates provided (the value-added impacts in particular) thus indicate an upper bound on the impacts that should reasonably be included in any cost-benefit analysis. Unfortunately, these impacts are omitted altogether from the cost-benefits analysis presented.

Omitting indirect and induced economic impacts is equivalent to assigning them a \$0 value in the cost-benefit analysis in FEIS Table 4.1.3.8 - this biases the analysis in favor of reallocating commercial quota to recreational anglers.

Objective cost-benefit analysis favors increasing commercial quota allocation.

Economic cost-benefit analysis (CBA) is the practice of adding up all costs and benefits to determine whether a policy change will have a net-positive or net-negative effect on society. Costs and benefits are all assessed in dollar terms and are added up across affected businesses, end consumers, and society at large. Table 3 itemizes the components of a complete cost-benefit analysis, categorized by the nature of costs or benefits and by the party realizing them. All these components are mentioned in the FEIS, but not all of them are included in the cost-benefit analysis presented in Table 4.1.3.8.

It is important to recognize that cost-benefit analysis is only appropriate in this setting at *the margin*. That is, we can use current economic data to estimate whether some reallocation between commercial and recreational quota is worthwhile, but a finding of one fishery exhibiting a higher marginal economic value does not indicate the entire quota should be allocated to that fishery (Edwards, 1991). For this reason, I present updated cost-benefit estimates on a per-fish basis.⁸

⁷ Economic theory assumes resources are dedicated to their highest-valued use. This implies that any substitute activities will be lower valued, so the impacts cannot be zero.

⁸ In effect, I recognize that the commercial vs. recreational quota allocation decision is distinct from changing the total annual catch limit (ACL). This mode of analysis is most similar to treating Alternative 2 as a baseline.

Table 3: Summary of Cost-Benefit Analysis (CBA) Components

Fishery	CBA Component	Who Is Affected	Where in FEIS	Included in FEIS CBA?
Recreational	Consumer Surplus	Recreational anglers	Table 4.1.3.4	Y
	For-Hire PS	Charters/headboats	Table 4.1.3.6	Y
	Suppliers PS	Bait-and-tackle shops, etc.	Table 3.4.2.9	N
	Indirect Effects	Suppliers to producers	Table 3.4.2.9	N
	Induced Effects	Broader economy	Table 3.4.2.9	N
	Climate Change Impacts	Broader economy	Table 3.2.1	N
	Commercial	Consumer Surplus	End consumers of seafood	Table 4.1.3.1*
Harvester PS		Comm. harvesters	Table 4.1.3.2	Y
Dealer/Processor PS		Comm. dealers/processors	Table 4.1.3.1*	Y
Wholesaler PS		Comm. wholesalers	Table 3.4.1.24	N
Retail PS		Comm. retail/restaurants	Table 3.4.1.24	N
Indirect Effects		Suppliers to producers	Table 3.4.1.24	N
Induced Effects		Broader economy	Table 3.4.1.24	N
Climate Change Impacts		Broader economy	Table 3.2.1	N

*As discussed above, Table 4.1.3.1 presents dealer/processor willingness-to-pay as if it is consumer surplus.

It is clear from Table 4 how strongly the conclusions of the FEIS cost-benefit analysis depend on the assumed outsize value per fish for recreational consumer surplus. Without that assumption, the economic analysis provided in the FEIS produces the opposite conclusion. Namely, net economic benefits per fish are \$11.62 per fish higher in the commercial fishery, indicating some quota should be reallocated from recreational to commercial use.

Table 4: Net Economic Benefits Per Fish (\$2021), Bottom-Line CBA

Source of Benefits or Costs	Commercial	Recreational
Consumer Surplus	X	\$3.82
Charter/Headboat For-Hire Producer Surplus	\$0.00	\$1.67
Recreational Suppliers Producer Surplus	\$0.00	X
Commercial Harvesters + Dealers/Processors Producer Surplus	\$17.11	\$0.00
Commercial Wholesale + Retail Producer Surplus	X	\$0.00
Indirect Effects	X	X
Induced Effects	X	X
Climate Change Impacts	X	X
Total	\$17.11	\$5.49

The second cost-benefit analysis scenario is presented in Table 5. This is a “top-line” scenario including upper limits of economic impacts, where available. Consumer surplus for end consumers of commercially harvested Red Grouper remains omitted, as it is beyond the scope of my review to generate new estimates. The value-added impacts are as presented in the FEIS, but

adjusted to be on a per-fish basis and adjusted to 2021 dollars using CPI.⁹ Climate change impact estimates from my review are included as well - these are top-line numbers that have not been adjusted downward for the per-trip share of Red Grouper catch. The top-line numbers indicate net economic benefits per fish are up to \$85.94 higher in the commercial fishery.

Table 5: Net Economic Benefits Per Fish (\$2021), Top-Line CBA

Source of Benefits or Costs	Commercial	Recreational
Consumer Surplus	X	\$3.82
Direct + Indirect + Induced Value-Added Impacts	\$145.15	\$66.87
Climate Change Impacts	(\$0.32)	(\$4.43) - (\$11.80)
Total	\$144.83	\$58.89 - \$66.26

Tables 4 and 5 indicate that economic benefits are estimated to increase by \$11.62 - \$85.94 per fish, for each fish allocated from recreational to commercial quota. These numbers are also biased downwards by the omission of consumer surplus for end consumers of commercial harvest. The missing data limits what comparisons can be made, but the CBA tables make clear that commercial catch is likely to generate more net economic benefit than recreational catch on a per-fish basis. This is a strong argument in favor of *reversing* Amendment 53, and instead reallocating some recreational Red Grouper quota to the commercial sector.

Objective cost-benefit analysis suggests net economic benefits are higher at the margin for commercial harvest than for recreational. Any reallocation of quota should therefore be going into, and not out of, the commercial fishery.

Confidence in the analysis is overstated because estimates of uncertainty are missing.

In addition to non-disclosure of the many missing components of a complete cost-benefit analysis, the FEIS also fails to estimate or even disclose the substantial uncertainty associated with the estimates presented. In the case of the economic value-added estimates, estimation of uncertainty may be difficult because confidence intervals are not reported by input-output modeling software such as IMPLAN. However, confidence intervals on the underlying data can still be passed through the software. This would not quantify the modeling uncertainty from the input-output model itself, but it would at least acknowledge the substantial uncertainty in the underlying data.

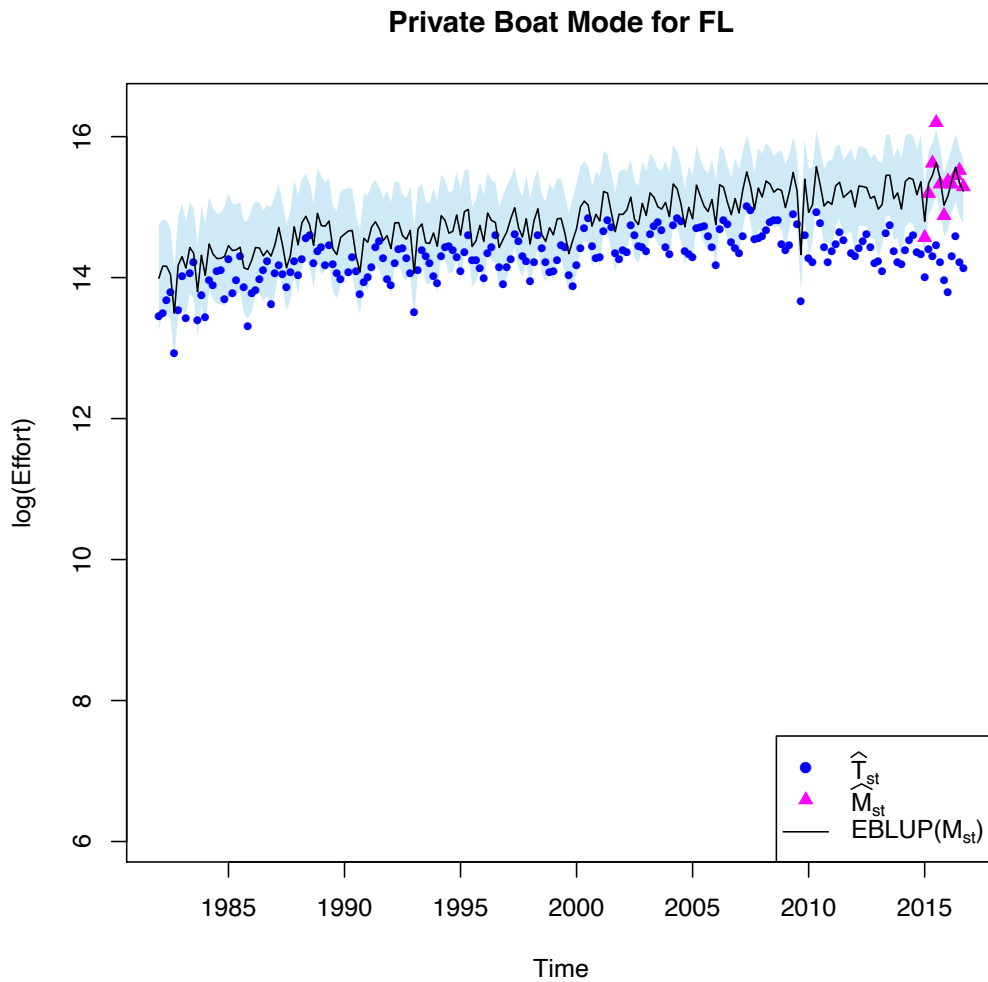
In the case of recreational consumer surplus, the substantial uncertainty in the willingness-to-pay estimate of \$110 per fish is not disclosed, nor is the obvious uncertainty arising from the fact that many other studies have found substantially different values (including those analyzed by USEPA, as discussed above). In fact, two more recent studies by the same authors find less than half the WTP per fish (Carter, Lovell and Liese, 2020; Carter, Liese and Lovell, 2022).

⁹ The commercial value-added reported in the FEIS is biased downwards due to the use of outdated data. As identified in a recent report (Murray, 2021), these impacts are more than 50% higher using current prices and using the latest fishery inputs markups from NMFS (2018).

Perhaps most concerning is the failure to quantify the uncertainty surrounding the retrospective predictions of recreational landings when converting the historical time series into MRIP-FES units. The non-economic argument in the FEIS for reallocating commercial quota to the recreational fishery depends entirely on the claim that 40.7% of Red Grouper landings were recreational landings over the period 1986 – 2005. An objective analysis of uncertainty would need to show that this estimate is statistically significantly different from the historical allocation of 24%.

As discussed in the MRIP-FES calibration review panel, the NMFS researchers were unable to explain the large difference in MRIP-FES catch estimates using covariates in the statistical calibration model (NMFS, 2017a). Reviewer Jason McNamee also noted it was impossible to certify the accuracy of the predictions backwards in time (NMFS, 2017b). Neither of these difficulties are surprising given the difficulty of predicting data going back decades from just a few recent years of calibration data, and the lack of an underlying causal model to explain changes in behavior, demographics and other factors.

Figure 1: FL Private Boat Effort Calibration, Mail (MRIP-FES) vs. Telephone (CHTS)



It is beyond the scope of my review to conduct a full analysis of the MRIP-FES calibration, but I did attempt to assess the prediction errors. Figure 1 above (NMFS, 2017c, p.4) depicts the MRIP-FES predictions (black line) and confidence interval (blue shaded area) for private boat trips by

Florida anglers, compared against the historical CHTS estimates (blue dots). These anglers represent the overwhelming majority of the Red Grouper recreational fishery. The figure depicts nearly all the CHTS estimates being inside the confidence interval for the MRIP-FES prediction over the period 1986 - 2005, implying that the MRIP-FES predictions are not statistically different from the existing CHTS estimates. In other words, there appears to be insufficient statistical information to determine that historical catch for these anglers was different from the previous estimates, and therefore no basis for reallocation. Clearly a more formal review and analysis is required.

Failing to evaluate uncertainty is equivalent to claiming zero chance of estimation error. Many estimates in the FEIS are highly uncertain and addressing this uncertainty calls into question the statistical and economic reasoning offered to support Amendment 53.

As stated at the outset of my letter, the cost-benefit analysis in the FEIS supporting Amendment 53 hinges entirely on the arbitrary assignment of outsize enjoyment benefits to recreational anglers. If this assumption is removed, the cost-benefit analysis in the FEIS supports my conclusions here (see Table 4 above). Namely, reallocating commercial quota to recreational use will cause substantial economic losses.

The FEIS also makes critical omissions which serve to bias its economic analysis towards finding a lower economic benefit from commercial harvest. Objective analysis would at least acknowledge and justify these omissions, even if they cannot be corrected with currently available data. That said, except for assuming recreational consumer surplus to be 25x higher per fish than USEPA estimates, the FEIS cost-benefit analysis would find in favor of commercial allocation even without any further corrections. In addition, the FEIS fails to adequately quantify statistical and economic uncertainty, leading to overconfidence bias in the conclusions drawn.

In sum, the FEIS contains incomplete, arbitrary and biased analysis - it cannot be relied upon for federal rulemaking until corrections are made. I urge NOAA to reject Amendment 53 and remand the issue for further review.

Respectfully,

THOMAS SPROUL, PH.D.

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BY ELECTRONIC MAIL

February 18, 2022

Peter Hood, Branch Chief
NOAA Fisheries
Southeast Regional Fisheries Office
263 13th Avenue South
St. Petersburg, FL 33701

Re: Reef Fish Resources of the Gulf of Mexico FMP Amendment 53 Proposed Rule Comments

Dear Mr. Hood:

I represent the Gulf Coast Seafood Alliance, a diverse group of stakeholders wishing for a common goal: equitable and sustainable fisheries along the Gulf Coast for commercial and recreational use alike. The Alliance is opposed to the proposed rule for Amendment 53 of the Reef Fish Complex Fishery Management Plan (FMP). The rule, as proposed, is not in accordance with the law and will have dire negative economic consequences on members of the Alliance, and runs contrary to the Alliance's stated purpose of an equitable and sustainable fishery. On behalf of the Alliance, I write to urge you to disapprove the proposed rule. I submit these comments in conjunction with comments from Dr. Tom Sproul, Aubrey Church, and Dr. Steve Cadrin.

In the aforementioned comment letters, the authors identify several deficiencies within the proposed rule, including the following:

- Does not promote the conservation of a fish stock,
- Does not advance the objectives of the Fishery Management Plan,
- Does not minimize bycatch,
- The economic analysis does not contain the best available scientific information.

The deficiencies listed above individually make the proposed rule not in accordance with the law, let alone collectively. Each one of the identified deficiencies, have led courts to overturn previous Fishery Management Plans amendments or Agency action that contained these same flaws.

There is also significant precedent from the Amendment 28 to the Reef Fish FMP rulemaking, that this proposed rule is not in accordance with the law.

Allocation Failing to Promote the Conservation of a Fish Stock

As outlined in the comment letter from Aubrey Church and Dr. Steve Cadrin section A, the proposed rule does not promote the conservation of red grouper. National Standard 4 requires that an allocation of fishing privileges "shall be ... reasonably calculated to promote conservation." 16 U.S.C. § 1851(a)(4). And Congress attached that requirement specifically to the "allocat[ion] [of] ... fishing privileges," not to the FMP as a whole. *Id.* Accordingly, by the standard's terms, if the Service decides to allocate fishing privileges to a specific group, that allocation must actually "promote" a conservation purpose—that is, advance or further it—rather than just avoid jeopardizing one. *Groundfish Forum v. Ross*, 375 F. Supp.2d 72, 86 (D.D.C. 2019) (invalidating fishery allocation under National Standard Four when the allocation achieved no conservation purpose). An allocation that only avoids "weaken[ing]" conservation objectives cannot be said to "promote" them, as the MSA requires. *Id.* The record clearly shows through NMFS analysis that at best the new allocation plan has the same risk of overfishing and as the old allocation plan. Therefore, conservation is at best only neutral and that does not satisfy the requirements of National Standard 4, which requires the allocation to “promote” or improve conservation.

Does Not Advance the Objectives of the Fishery Management Plan

The New Reef Fish fishery management plan has among it the following objectives: To achieve robust fishery reporting and data collection systems across all sectors for monitoring the reef fish fishery, which minimizes scientific, management, and risk uncertainty; to minimize and reduce dead discards; and to promote and maintain accountability in the reef fish fishery. As shown throughout the Church submission and the proposed rule submissions, all of these objectives are directly contradicted by the proposed rule. The goals and objectives of an Amendment to a fishery management plan matter, as they provide a road map to the public of what the action is striving to achieve. By selecting alternatives that contradict these stated goals the Agency is acting in an arbitrary and unreasonable fashion. “The goals of an action delimit the universe of the action’s reasonable alternatives.” *Oceana, Inc. v. Evans*, 2005 WL 555426, *7 (D.D.C. 2005), quoting *City of Alexandria v. Slater*, 198 F.3d 862, 867 (D.C. Cir. 1999).

Does Not Minimize Bycatch

The fact that bycatch will increase from the proposed reallocation is strewn throughout the proposed rule submission and is discussed in the Church letter Section B. National Standard 9, 16 U.S.C. § 1851(a)(9), states: “Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.” In *Coastal Conservation Ass’n v. Gutierrez*, 512 F.Supp.2d 896 (2007), the Court invalidated an Amendment to the red snapper fishery because it did not contain measures to minimize bycatch. Again in *Flaherty v. Bryson*, 850 F.Supp.2d 38 (2012), the Court found that NMFS violated the law by not including measures to address the minimization of

bycatch, to the extent practicable, in the herring fishery. The scenario we have before us with Amendment 53 is similar in that there are no measures to reduce bycatch. Rather, for the first time that I am aware of since the implementation of the Sustainable Fisheries Act, NMFS is proposing to knowingly and willfully increase bycatch in a directed fishery in complete contravention of National Standard 9. Amendment 53, if approved, will present a novel fact pattern for the courts on the implementation of National Standard 9.

The Economic Analysis Does Not Contain the Best Scientific Information Available

The Sproul letter clearly highlights the fact that the economic analysis did not use the best scientific information available to the NMFS and the Council in analyzing the economic impacts of the allocation of red grouper. Under 16 U.S.C. § 1851(a)(2), Conservation and management measures shall be based upon the best scientific information available. 50 C.F.R. § 600.315(b) (1) illustrates various types of data that might constitute the "best scientific information available:"

Scientific information includes, but is not limited to, information of a biological, ecological, economic, or social nature. Successful fishery management depends, in part, on the timely availability, quality, and quantity of scientific information, as well as on the thorough analysis of this information, and the extent to which the information is applied. If there are conflicting facts or opinions relevant to a particular point, a Council may choose among them, but should justify the choice.

In *Hall v. Evans*, 165 F. Supp. 2d 114 (D.R.I. 2001), the Court concluded that NMFS violated National Standard 2 because the Secretary had not utilized the best scientific information available to the agency when it made an allocation in the monkfish fishery. The paper by Dr. Sproul makes clear that the EPA meta-analysis is far superior than the economic analysis used by NMFS in every objective way. While NMFS may choose between competing scientific papers, it must justify the choice, something it has failed to do in this proposed rule, and therefore it is acting contrary to the law. The Court in *Hall* goes on to explain that the Agency may make political compromises in its decision making, but it must explain those decisions and support them with the best scientific information available. *Id.* Obviously, any allocation decision has a political component to it, but there is no informed decision or explanation of the allocation choice in Amendment 58, that is supported by the best available science.

Amendment 28 Red Snapper DejaVu

Finally, the proposed rule for Amendment 53 is eerily similar to the rule NMFS promulgated for Amendment 28 to the Reef Fish FMP. As the Agency is certainly aware, the Court rejected the rule it promulgated under Amendment 28 in *Guindon v. Pritzker*, 240 F. Supp. 3d 181 (D.D.C. 2017) (striking down a reallocation that effectively rewarded the recreational sector for overharvesting as not "fair and equitable"). While my clients will concede that the facts are not entirely consistent between the allocation of red snapper in Amendment 28 and the allocation of red grouper in Amendment 53, the distinctions are minor in nature and do not distinguish the

two rule makings from each other, and certainly do not moot the case law. Once again, the Agency is proposing to use a retroactive analysis of the catch data to reward the recreational fishery, which had and will continue to have unrestrained catch of red grouper, at the expense of the commercial fishery that was and will continue to fish under restrictions that limit its catch. I do not believe that the Agency has contempt for the rule of law, so it is surprising that it is proposing to walk down a well-trod path and it is expecting a different result at the end.

Conclusion

NMFS proposed rule for Amendment 53 is incredibly problematic. This letter has identified several areas where the proposed rule fails to meet the letter of the law, that each on their own will invalidate the rulemaking. Given the precedent of the Amendment 28 rulemaking and the serious deficiencies in this proposed rule, it is prudent for the Secretary of Commerce to disapprove this rule, under her authority in the Magnuson-Stevens Act.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Minkiewicz". The signature is written in a cursive, slightly slanted style.

Andrew E. Minkiewicz
Counsel for Gulf Coast Seafood Alliance