Gulf of Mexico Fishery Management Council

EFH Contract Review

Tab B, No. 9(b)

Gulf of Mexico Fisheries Management Council
Meeting Biloxi, MS August 2024

Overview of EFH Contract Review

- Essential Fish Habitat (EFH): Areas critical for fish life stages
  - Contract Awarded To: Dr. Bridgette Froeschke, University of Tampa
- Objective: Support the Council's EFH descriptions in a new amendment
- Work Includes: Identifying, cataloging, and assessing habitat data
- Council's Role: Guide and review project progress

Key Goals of EFH Data Collection

- Identify: Comprehensive, contemporary habitat datasets
- Catalog: Relevant datasets with associated metadata
- Inform: EFH descriptions to protect vital habitats
- Engage: Stakeholders to contribute insights and data

SSC's Role in the EFH Review Process

- Task: Review spatial habitat data collected to date
- Evaluate: Quality and completeness of the datasets
- Identify: Any missing or overlooked data sources
- Provide: Feedback to improve the final report

Challenges in Analyzing Habitat Changes Over Time

- Question Raised: Can habitat distribution changes be tracked over time?
- Current Limitation: Many datasets only offer a range of years, not specific dates
- Data Availability: Some shapefiles specify exact years; others do not
- Next Steps: Need for more detailed temporal data to track changes accurately

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2025-2028 Research and Monitoring Priorities

Gulf of Mexico Fisheries Management Council
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Overview 2025-2028 Research and Monitoring Priorities

- **Purpose**: Guide efforts to resolve knowledge gaps and expand datasets
- **Timeline**: Priorities cover the 2025-2028 grant cycle
- **Review Process**: SSC and Council review, then posted on Council website
- **Distribution**: Sent to NMFS and relevant agencies for funding consideration
- **Impact**: Aims to enhance management of federal fisheries

Concerns Raised by SSC Members

- **Short Notice**: Difficulty in reviewing extensive priority list quickly
- **Priority Labeling**: Concerns over too many items marked as "Priority A“
- **Suggestion**: Streamline and categorize priorities more selectively
- **Objective**: Increase focus and utility for funding agencies

Enhancing Document Clarity

- **Proposal**: Break down priorities further with specific codes
- **Benefit**: Could improve document clarity and effectiveness
- **Caution**: Avoid overcomplicating the process
- **Emphasis**: Strategic thinking in identifying high-impact priorities

Future Actions and Next Steps

- **Evaluation**: Assess how often priorities secure funding
- **Value**: Consider if time spent on list is justified by its impact
- **Next Steps**: Explore practical importance at a future meeting
- **Timeline**: Refine and finalize list for November 2024 Council meeting

Gulf of Mexico Fishery Management Council

ABC Control Rule Modifications

Gulf of Mexico Fisheries Management Council
Meeting Biloxi, MS August 2024

Future Actions and Next Steps

- **Purpose:** Review alternative approaches to the ABC Control Rule
- **Current Rule:** In place since 2011; uses p* approach to assess scientific uncertainty
- **Key Issue:** Current buffer between OFL and ABC often misaligns with stock assessment uncertainty
- **Proposed Approach**: SEFSC suggests modifying the rule to better reflect stock status

Key Proposals by SEFSC

- **BCRIT Introduction**: Assign critical biomass level to halt fishing below certain stock size
- *Separate P and σ**: Address P* (Council's prerogative) and σ (scientific uncertainty) individually
- **Tiered System**: Increase buffer between OFL and ABC as data quality/quantity decreases
- **Evaluation via MSE**: Use Management Strategy Evaluation (MSE) to test proposed rules
- **SSC Motion:** The SSC recommends that the SEFSC proceed with the MSE analyses proposed to assess the management impacts of different ABC control rules for Tier 1 stocks.

Discussion and Considerations

- **Concerns**: SSC members concerned about revisiting control rule amid ongoing assessments
- **Testing**: SEFSC proposes testing new rule in scenarios above, below BMSY, and MSST
- **Buffer Sensitivity**: SSC to assess rule sensitivity to decisions like BCRIT and FMSY proxies
- **High Level Council Goals**: Emphasis on avoiding fishery closures, maintaining catch limit stability

Next Steps and Timeline

- **MSE Workload**: SEFSC building capacity; work expected to take ~2 years
- **SSC Recommendation**: Continue using Restrepo et al. approach until new rule is fully evaluated
- **Stakeholder Engagement**: Emphasize Council and SSC involvement in MSE work
- **Future Action**: Council to provide additional guidance at August 2024 meeting

SSC Motion:

- **Motion: The SSC recommends that the SEFSC proceed with the MSE analyses proposed to assess the management impacts of different ABC control rules for Tier 1 stocks.**

- ***Motion carried without opposition.***

Gulf of Mexico Fishery Management Council

Regional and Sector-Specific GOM Age, Growth and Age-lengths key Estimation Derived from Otolith-based aging

Gulf of Mexico Fisheries Management Council
Meeting Biloxi, MS August 2024

Research Objectives & Methodology

- **Objectives:**
  - Sample gray triggerfish across Gulf regions.
  - Estimate age via otoliths and dorsal spines.
  - Validate age estimates using bomb 14C chronometer.
  - Analyze sex-specific size-at-age and growth among regions.
  - Develop age-length keys (ALKs) by sex, region, and fishery sector.
- Methodology:
  - Comparison of otolith and new dorsal spine ageing protocols.
  - Validation of age estimates using advanced techniques.

Key Research Findings and Implications

- **Key Points:**
  - Validated dorsal spine and otolith ageing; new spine protocol is more precise and faster.
  - No significant differences between otolith and new spine ageing in growth models.
  - Identified significant bias in older spine protocol affecting stock assessment; re-ageing recommended.
- **Implications:**
  - The new methodology will be crucial for accurate stock assessments and management strategies.

Gulf of Mexico Fishery Management Council

Influence of Timing and Duration of Recreational Seasonal Harvest Restrictions on Gag Effort, Harvest, and Discards in GOM

Gulf of Mexico Fisheries Management Council
Meeting Biloxi, MS August 2024

Influence of Seasonal Harvest Restrictions on Gulf Gag Grouper

- **Focus:** Impact of changes in recreational fishing season duration on Gulf gag grouper effort, harvest, and discards.
- **Context:** Gag grouper declared overfished and experiencing overfishing (SEDAR 72 2022), leading to reduced catch limits (GMFMC 2023).
- **Objective:** Develop a multi-model framework to predict recreational effort, CPUE, and harvest proportion using 2023 MRIP data.

Model Framework and Simulation Design

- **Framework Components:** Regional gag abundance, fishing effort, CPUE, fishing days, social, economic, and environmental factors.
- **Simulation:** Tested different fishing season start dates and durations.
- **Key Variables:** Discard mortality estimated using sea surface temperature (SST); effort simulation included as a predictor in the CPUE model.
- **Findings:** Simulation showed cumulative dead discards relatively unchanged regardless of season start date.

Model Framework and Simulation Design

- **Season Duration:** Moving from a one-month to a two-month season increased removals; magnitude varied by season start date.
- **Uncertainty:** Higher uncertainty for shorter seasons; seasonal changes in discard mortality offset catch rate changes.
- **Harvest Proportion:** Insensitive to season start date; managing fishing seasons should focus on controlling harvest, considering season duration.

Discussion and Future Directions

- **Behavioral Response:** Critical for making appropriate management decisions; MRIP data not fully representative of private angling fleet.
- **Challenges:** Non-response bias in MRIP survey; need for better understanding of discard mortality.
- **Next Steps:** Collaborate with Florida Fish and Wildlife Conservation Commission to use observer program data from charter for-hire trips.
- **Conclusion:** Simulation suggests cumulative discards unaffected by season start date, likely due to continued reef fish fishing regardless of species-specific harvest openings.

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SEDAR Assessment Process Changes and Model Complexity

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Proposed Changes to SEDAR Assessment Process

- **Proposal:** Assess up to 12 species every 8 years with updates between full stock assessments.
- **Approach:** Match assessment complexity to the available data; focus on key stocks (e.g., red snapper, red grouper).
- **Objective:** Provide consistent and predictable stock assessment advice with some capacity for unforeseen needs.

Data Availability and Model Complexity

- **Data Sources:** Fishery-independent and -dependent data, fleet-specific data, G-FISHER composite video survey.
- **Data Timelines:** Delays in age composition data availability; timelines for data inclusion in stock assessments.
- **Model Complexity:** Considerations for matching assessment methods to data availability; need to address uncertain or biased data.
- **Technology Integration:** Use of AI to improve video data processing, with incremental advancements, especially for red snapper.

Challenges in the Assessment Process

- **Post-Assessment Work:** Need to clarify expectations for management updates between assessments.
- **Processing Time:** Potential reduction in video survey processing time with AI; inquiry into AI application for plankton surveys.
- **Assessment Pairing:** Reconsideration of statistical catch-at-age models to reduce process error and enhance data collection.
- **Council Discussions:** Plans for October 2024 SSC meeting to discuss how to proceed with SEDAR process changes by species.

Balancing Consistency and Flexibility in Management

- **Question:** How to balance consistency in management advice with the need for updates and changes.
- **Stakeholder Impact:** Stable management periods reduce stress on stakeholders and improve the estimation of management effects.
- **Council Representative:** Dr. Tom Frazer emphasized the need for predictable management periods.
- **SSC Member Insight:** Stable management allows for better assessment of stock response to management changes.

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RESTORE Project Update

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Overview of the RESTORE Project

- **Project**: 5-year RESTORE initiative to develop new modeling technologies.
- **Goal:** Enhance stock assessment methods to improve OFL (Overfishing Limit) and ABC (Acceptable Biological Catch) decision-making in Gulf fisheries.
- **Focus Areas:**
  - Realism and accuracy of projections.
  - Throughput and robustness of management advice.
  - Model interpretability and uncertainty quantification.

Projections and Red Tide Mortality

- **Projections**: Simulations for estimating reference points and short-term OFLs.
- **Factors Considered**: Future fishery dynamics, ecosystem effects, selectivity-based MSY (Maximum Sustainable Yield) estimates, discards, and more
- **Red Tide Mortality**:
  - Applied age-specific mortality rates for gag and single rate for red grouper.
  - Simulations included red tide as a discard fleet, influencing SSB (Spawning Stock Biomass).
  - Potential Options: Incorporate average red tide mortality in all projections or adjust SPR (Spawning Potential Ratio) proxy targets.

Selectivity-Based MSY and Discards

- **Selectivity-Based MSY**:
  - Adjustments for different fleets and allocation changes.
  - MSY/OFL estimates consider single fleet projections and compare to managed allocations.
  - Example: Bigeye tuna OFLs generated by fleet.
- **Discards:**
  - Estimated proportional to fishing effort at OFL.
  - Consideration of closed season discards and litigation risks.
  - Solutions: Set fleet-specific F in projections or adjust retention rate.

Management Advice Throughput and Next Steps

- **Improvements:**
  - Data provisioning and automation.
  - Increased frequency and robustness of management advice through interim analyses.
  - Importance of representative indices and handling retrospective patterns.
- **Next Steps:**
  - Regular progress reporting to SSC (February and July presentations).
  - Consideration of social and economic factors in project outcomes.
  - Further integration of discard mortality in future catch allocations.