Gulf of Mexico Yellowedge Grouper (*Hyporthodus flavolimbatus*)

SouthEast Data, Assessment, and Review (SEDAR) 85 Summary

Gulf SSC Review Completed February 2024

Data Inputs

Commercial landings predicted by the assessment model are shown (Figure 1), and include minimal estimates of recreational landings and dead discards. Recreational removals were updated using the Fishing Effort Survey. Indices of relative abundance were included from multiple sources (Figure 2).

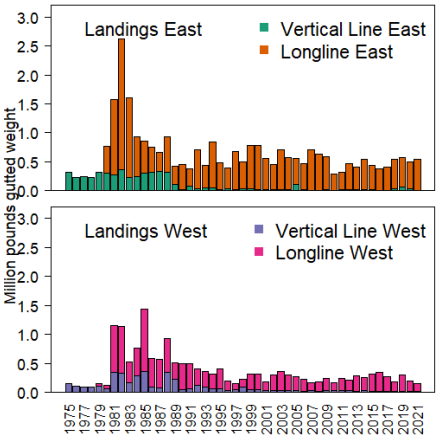

Figure 1: Final landings estimates from the SEDAR 85 Operational Assessment model for commercial fisheries in millions of pounds for the Eastern and Western Gulf of Mexico, 1975-2021.

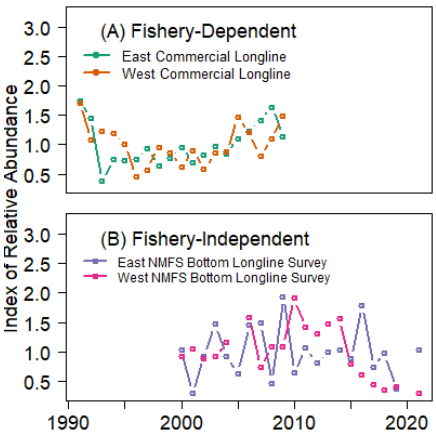

Figure 2: Fishery-dependent (A) and -independent (B) indices of abundance input into the SEDAR 85 Operational Assessment model.

Stock Status

The assessment found that Yellowedge Grouper in the Gulf is not overfished but is undergoing overfishing as of 2021 using a Spawner Potential Ratio of 40% (Figure 3). Benchmarks including the Maximum Fishing Mortality Threshold (MFMT) and Minimum Stock Size Threshold (MSST) are defined in Table 1.

Table 1: Benchmarks from the SEDAR 85 Operational Assessment model. Spawning Stock Biomass (SSB) = metric tons, F = harvest rate (total biomass killed / total exploitable biomass).

Benchmarks	
Spawner Potential Ratio (SPR)	40%
Natural Mortality Rate (M)	0.073
MFMT = $F_{MSYproxy}$	0.04
$F_{2019-2021}$/ MFMT	1.08
Overfishing (F/MFMT> 1)?	Yes
$SSB_{MSYproxy}$	4,842
MSST = (0.75)*$SSB_{MSYproxy}$	3,632
$SSB_{2021}/SSB_{Unfished}$	0.46
SSB_{2021}/MSST	1.66
Overfished (SSB/MSST< 1)?	No

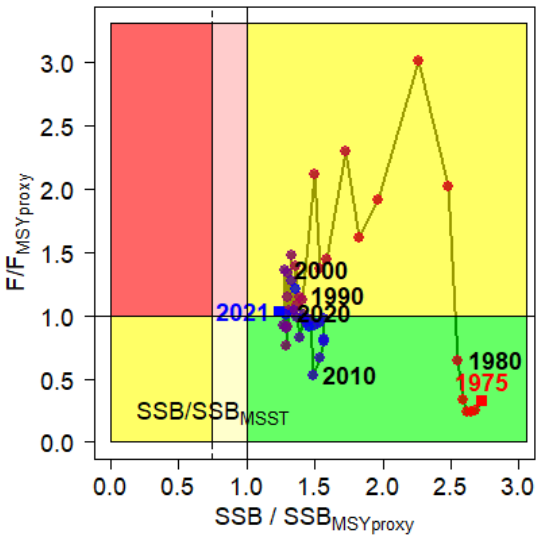

Figure 3: Kobe plot showing the progression of exploitation status of Gulf Yellowedge Grouper from 1975 (red) to 2021 (blue), with MSST denoted.

Assessment Outcome

The Gulf of Mexico Fishery Management Council's Scientific and Statistical Committee (SSC) accepted the SEDAR 85 Operational Assessment model as the best scientific information available, and deemed it appropriate for providing management advice (Tables 1-2).

Projections

Final projections were run using an MSYProxy of 40% SPR and using the average landings from 2021-2022 as the proxy for the interim projection years of 2023 and 2024 for each fleet. For determining catch advice, the SSC supported using the mean recruitment over the last 15 years, which was below the mean of the time series where recruitment was estimated (Figure 4).

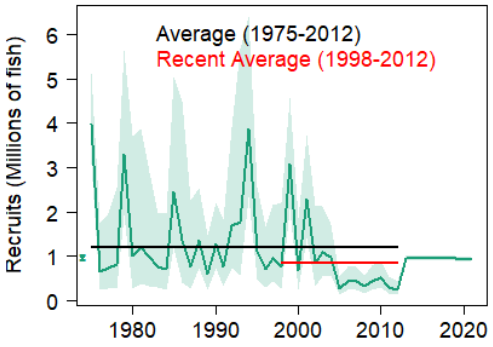

Figure 4: Annual and virgin (dot) recruitments estimated by the SEDAR 85 Operational Assessment model with uncertainty estimates (shading).

Table 2: SSC recommended catch levels for the Overfishing Limit (OFL; yield at FMSYproxy) and the Acceptable Biological Catch (ABC; yield at 75% FMSYproxy) for 2025-2029 (shown in Figure 5). Catch units are million pounds gutted weight (mp gw).

Yr	OFL	ABC
2025-2029	0.487	0.372

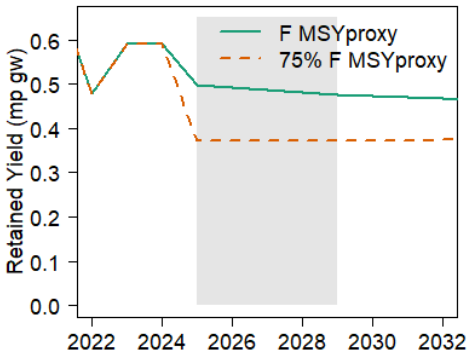

Figure 5: Retained yields from the OFL and ABC projections with the years highlighted (in gray) for catch advice.