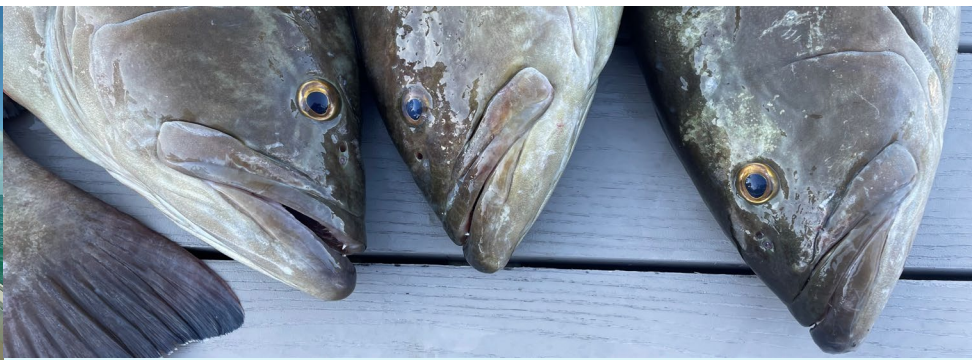




Tab B, No. 4(e)

Reef Fish Amendment 56 / 2022 Gag Grouper Emergency Rule:

Gag Grouper Fishery Dynamics in the Gulf of Mexico



Background

- SEDAR 72 found Gulf gag grouper to be overfished and undergoing overfishing
 - Only about 2% of SSB is male
 - Sectors not landing their ACLs
- Council and SERO working on emergency rule to reduce F
- Council working on RF Amendment 56, which will create gag rebuilding plan



A Little Life History...

- Protogynous hermaphrodites: born female, transition to male
- 50% of females sexually mature by 3.9 years old (~24 in TL)
- Spawn January – April; peak in mid-February – mid-March



- Juveniles settle inshore in seagrass beds and shallow relief
- Adults move to deeper nearshore/offshore reefs
- Previously thought gag “move inshore” in winter; tag data refutes this assumption to some degree
- Aggregate spawners: one male can fertilize several females

Gulf Gag Grouper Directed Fleets

Recreational Sector

- Federal for-hire fleet
- Private vessels and State for-hire fleets

Commercial Sector

- IFQ Program:
 - Vertical Line
 - Longline



Gulf Gag Grouper Directed Fleets: Recreational Sector

- Landings spike when fishing season opens June 1
 - Anglers fish deep, cool water for actively feeding gag grouper
- Landings drop off considerably in July as water warms
- Landings remain low until late-October
 - First cold fronts start to arrive, water temperature drops
- Landings spike in November and remain high through December 31.
- Recreational spearfishing more popular in Nov/Dec
 - Summer rains over, and water is cool and clear
 - Cool water = active gag grouper bite, especially nearshore

Gulf Gag Grouper Directed Fleets: Commercial Sector

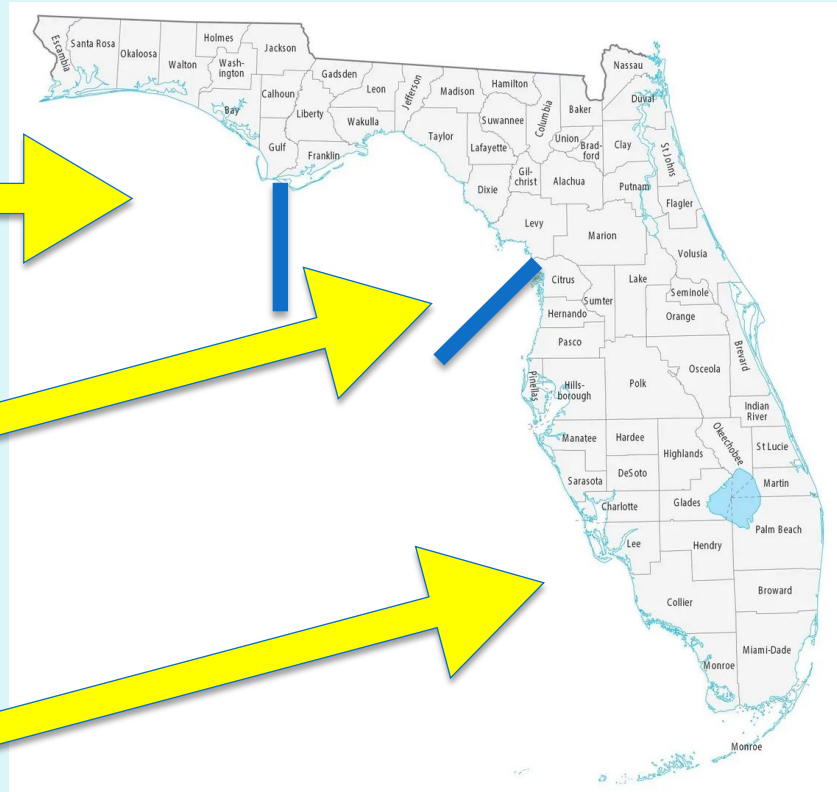
- Managed under the Grouper Tilefish Individual Fishing Quota (IFQ) program
 - Permitted year-round for those holding allocation
- Hook and line landings higher January – March
 - Water temperatures cool
- Hook-and-line landings decrease into the summer
 - Warm water means less actively feeding gag grouper
- Landings increase again in fall and early winter
 - Bite picks up as water temperatures decrease
- Commercial longline landings account for about 1/3 of commercial harvest, and come from deeper waters

Gulf Gag Grouper Fishing Regions

Florida Panhandle

Big Bend

West Florida Shelf



Gulf Gag Grouper Fishing Regions: Florida Panhandle

- Recreational fishing coincides with FWC's private angling and NMFS' federal for-hire red snapper seasons
- Anglers can fish for both species
 - Popular with for-hire operations
- Recreational landings in this region low compared to the rest of Florida
 - Bulk of biomass found in Big Bend and West Florida Shelf



Gulf Gag Grouper Fishing Regions: Big Bend

- Low angler density, large resident biomass
- FWC occasional special spring season in state waters from April – June off Franklin, Wakulla, Taylor, and Jefferson Counties
- Large swaths of seagrass and low-relief natural bottom
 - Popular in fall when water temperature drops and nearshore visibility improves with less rainfall
- Madison-Swanson and Steamboat Lumps MPAs
 - Created to protect known habitats used by the gag SSB from fishing



Gulf Gag Grouper Fishing Regions: West Florida Shelf

- Highest recreational fishing effort, large resident stock biomass.
- Fishing effort spikes in June, and drops quickly as water warms
- Fall cold fronts occur in late October and early November
 - Gag begin to bite more near shore (depths \leq 20 meters or 65 feet)
 - Clear water means anglers can see suitable habitat for gag from the surface. Good for spearfishing.
- Fishing effort remains high from November through the end of December for both private and for-hire anglers
 - Most popular months for recreational gag grouper fishing

Gulf Gag Grouper Fishing Regions: West Florida Shelf



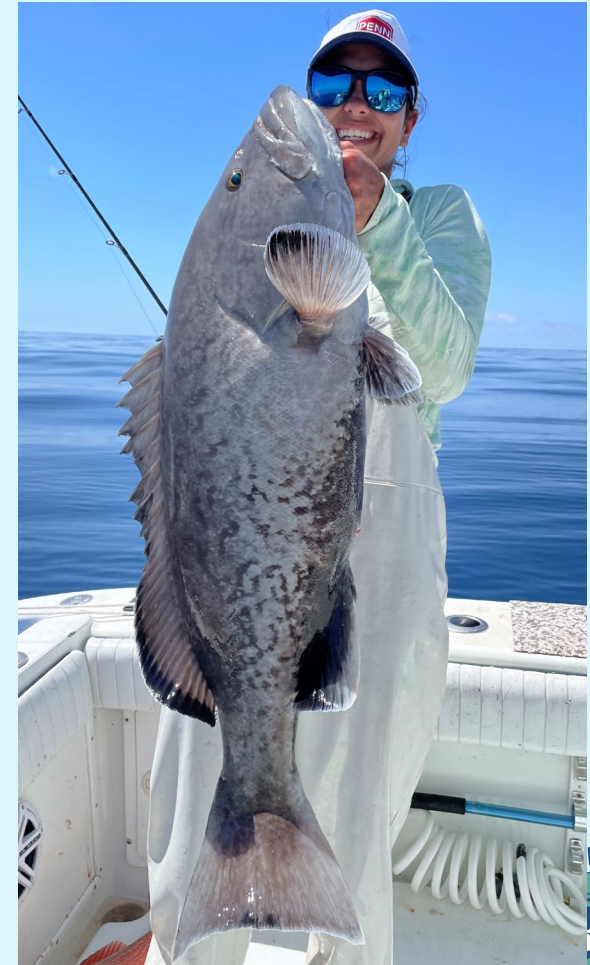
Management Considerations

- SEDAR 72 found gag grouper to be overfished and experiencing overfishing
 - Gag grouper very vulnerable to red tide (2005, 2014, 2018)
 - Lower-than-average recruitment over the last 10-15 years (linked?)
- Female to male ratio outside Madison-Swanson and Steamboat Lumps MPAs approximately 50:1, and 20:1 inside those MPAs
- SSC recognized reproduction limitation, and recommended that future estimations of stock status and catch limits consider male SSB
- Need to conserve males to bolster recruitment
- Need to reduce discard mortality across the board



Management Considerations: Protecting the Males

- Remaining males found in deeper waters (>30 m or 100 ft)
 - Typically fished in summer months, when water is warm shallow depths
 - Warm water means a slow bite
 - Less aggressive feeding by nearshore gag grouper, which are all female
 - Anglers go to deeper waters, where fish nearer the bottom are in cooler water, and tend to feed more aggressively
 - Deeper water gag more likely to be large females and importantly, males



Management Considerations: Protecting the Males

- Remaining males found in deeper waters (>30 m or 100 ft)
 - Summer fishing may result in disproportionate targeting of males and large females
 - Reducing fishing pressure on deep-water gag grouper may increase probability and speed of stock recovery
 - Larger, older fish vastly more reproductively valuable
 - May improve the ratio of females to males in the spawning stock biomass



Management Considerations: Reducing Discard Mortality

- Summer fishing can drive anglers to deeper water
- Reef fish caught in water > 20 m or 65 ft may suffer barotrauma
- Barotrauma may cause internal bleeding and organ damage; severity increases with depth
 - Venting and using descending devices can mitigate the effects of barotrauma
 - When caught in deeper depths > 100 m or 330 ft, discard mortality is high, and may exceed 90%.



Management Considerations: Reducing Discard Mortality

- Tailor fishing effort away from larger, older fish in deeper waters to reduce discard mortality
 - Greatest benefit to more reproductively important members of the SSB, including males
 - May increase recruitment and probability and speed of stock recovery
- Council public testimony (April 2022):
 - Winter fishing (Oct – Dec) primarily in nearshore waters ≤ 20 m or 65 ft.
 - Likelihood of barotrauma is substantially reduced; more so in cool winter water.
 - Probability of catching a male in nearshore waters ≤ 20 m or 65 ft is near-zero, per fishermen and empirically collected research



Questions?

