

**Snapper Grouper Advisory Panel**  
**FLK/EFL Hogfish Fishery Performance Report**  
**UPDATED Discussion Questions**  
**March 2024**

The Snapper Grouper Advisory Panel (AP) is being asked to provide information to develop the fishery performance report (FPR) for Florida Keys and East Florida (FLK/EFL) hogfish. The purpose of the FPR is to assemble information from AP members' experience and observations on the water and in the marketplace to complement scientific and landings data. The FPR will be provided to the Scientific and Statistical Committee (SSC) to complement material being used in the upcoming benchmark assessment of FLK/EFL hogfish and to inform future management of this stock.

A summary of current FLK/EFL hogfish federal regulations is provided in Table 1. The questions listed below are intended to provoke thoughts about the current state and changes to the FLK/EFL hogfish stock and fishery. However, some questions may not be applicable at this time. The scope of the FPR is not limited to the questions listed below, as the intent is to incorporate all relevant observational information that can help with assessing and developing management measures for FLK/EFL hogfish. *Italicized language was specifically requested by the assessment analysts.*

All South Atlantic FPRs are available in the Council's [FPR Application](#). The FLK/EFL hogfish FPR will be uploaded to this application when completed.

**Table 1.** Summary of FLK/EFL hogfish federal regulations.

<b>Overfishing Limit</b>	73,662 lbs ww (2023) 79,808 (2024) 85,486 (2025) 90,657 (2026) 95,311 (2027)	<b>Sector Allocation %</b>	Commercial: 9.63% Recreational: 90.37% (SG Am 37)
<b>Acceptable Biological Catch</b>	44,162 lbs ww (2023) 49,254 (2024) 54,183 (2025) 58,878 (2026) 63,295 (2027)	<b>Commercial ACL</b>	11,179 lbs ww (2023) 12,677 (2024) 14,167 (2025) 15,621 (2026) 17,018 (2027)
<b>Total Annual Catch Limit (ACL)</b>	41,954 fish (2023) 46,791 (2024) 51,474 (2025) 55,934 (2026) 60,130 (2027)	<b>Recreational ACL</b>	37,671 fish (2023) 41,934 (2024) 46,046 (2025) 49,949 (2026) 53,610 (2027)
<b>Fishing Year</b>	Jan 1-Dec 31	<b>Commercial Measures</b>	16"FL; trip limit 25 lbs ww (SG Am 37)
<b>Seasons</b>	Recreational season May 1-Oct 31	<b>Recreational Measures</b>	16" FL; 1/person/day (SG Am 37) No sale of recreationally caught fish.

### Questions for Advisory Panel:

The AP is asked to provide the following information about FLK/EFL hogfish based on their expertise, as appropriate:

- 1) Have there been **substantial changes** in the FLK/EFL hogfish fishery since 2012 (terminal year of last assessment)? If so, describe the timing, location, and what you think caused the change?

#### 2) Fishing Behavior/Catch Levels:

- Have there been effort shifts to/from FLK/EFL hogfish? If so, please describe, including the time frame for when these shifts occurred.
- Have there been considerable changes in fishing techniques and/or gear used to target FLK/EFL hogfish? If so, please describe, including the time frame for when these changes occurred.
- How much fishing for FLK/EFL hogfish typically occurs during the day versus at night? Has this changed?
- Do you actively avoid fishing for FLK/EFL hogfish in certain areas to avoid catching undersized fish or highly regulated fish (e.g., red snapper) to lessen bait loss?
- What do you see in terms of discards *by gear* in the commercial sector? In the recreational sector?
  - How often are FLK/EFL hogfish discarded? What are the reasons they are discarded?
  - Do you encounter FLK/EFL hogfish as bycatch when fishing for other species? If so, what species are being targeted on these trips?
  - Do you think discard mortality is a significant factor for this species? Has this changed? If so, please describe, including the time frame when the change occurred.
    - *In the prior benchmark, hook and line discard mortality was assumed 10% and spear was 100%. Is this still reasonable?*

#### 3) Social and economic influences:

- For the commercial sector, how has price and demand for FLK/EFL hogfish changed?
  - Is there increased demand for a specific size of FLK/EFL hogfish (e.g. plate sized)?
- How has demand for charter/headboat trips targeting FLK/EFL hogfish changed?
- Among the species you target, how important are FLK/EFL hogfish to your overall business (charter or commercial)?
- What communities are dependent on the FLK/EFL hogfish fishery? What challenges do these communities face, including those unrelated to fishing (ex. poverty, access to internet, unemployment, etc.)?
- Have changes in infrastructure (docks, marinas, fish houses) affected fishing opportunities for FLK/EFL hogfish? *How has damage caused by hurricanes affected fishing opportunities?*
- How have fishermen and communities adapted to changes in the FLK/EFL hogfish fishery?

#### 4) **Management measures:**

- Are there new management measures that the Council should consider or are there existing management measures (such as size limit, trip limit, bag limit, season, etc.) that should be changed?
- Are the current ACL and allocations appropriate for each sector?

#### 5) **Environmental/ecological/habitat:**

- Do you perceive that the abundance of FLK/EFL hogfish has changed over the past 12 years? If so, how has it changed?
- When/where are the fish available, and has this changed? For instance, has there been any shift in catch (annually/seasonally) inshore/offshore or north/south? If so, please describe.
- Has the size *or* sex of the fish that you typically encounter changed? If so, could you briefly describe the trend?
- Have you noticed any unique effects of environmental conditions on FLK/EFL hogfish? If so, please describe.
- What are your observations on the timing and length of the FLK/EFL hogfish spawning season in your area (time periods when fish are observed with large ovaries or eggs spilling out externally or while venting)?
- What do you see now in terms of recruitment? Where are the small fish? Are large and small fish found in the same locations?
- Have you observed changes in catch depth or apparent bottom type fished on?
- How have sea conditions (monthly/seasonally) affected fishable days?
- Have you noticed any change in the species caught with FLK/EFL hogfish over the years or seasonally?

#### 6) **Other:**

- What else is important for the Council to know about FLK/EFL hogfish?

### **Stock Risk Rating**

With the recent Council-approved Acceptable Biological Catch (ABC) Control Rule Amendment, the Council has decided to incorporate an evaluation of how much risk it should be willing to take based on biological, fishery (human interaction), and environmental factors affecting each stock. Input on these factors will be provided ahead of each assessment by the appropriate advisory panel and Scientific and Statistical Committee, and the Council will consider this input in determining the appropriate risk level (conveyed as a Stock Risk Rating of High, Medium, or Low) to use in the new ABC Control Rule. Risk Ratings will be used with relative biomass levels estimated through as stock assessment to determine the probability of overfishing that would be acceptable for that stock (P\*) (Table 2).

**Table 2.** Summary table of default risk tolerance levels based on stock risk ratings and relative biomass levels. MSY = maximum sustainable yield;  $B_{MSY}$  = Biomass of population that produces MSY; MSST = minimum stock size threshold.

<b>Stock Risk Rating</b>	<b>High Biomass</b> Biomass exceeds $B_{MSY}$ (or 110% $B_{MSYR}$ per <b>Sub-Alternative 2a</b> )	<b>Moderate Biomass</b> Biomass is ABOVE the midpoint between $B_{MSYR}$ and MSST	<b>Low Biomass</b> Biomass is below the midpoint between $B_{MSYR}$ and MSST
Low	45%	45%	40%
Medium	45%	40%	30%
High	40%	30%	20%

Final Risk Scores (numeric) for all South Atlantic snapper grouper species and dolphin and wahoo are ranked and apportioned into thirds to determine the final Stock Risk Ratings. Based on current scores, stocks are considered High Risk if their Final Risk Score is less than 2.03, Medium Risk if their Final Risk Score is between 2.03 and 2.35, and Low Risk if their Final Risk Score is greater than 2.35.

**AP Action:**

- Review initial scores for each attribute (Table 3). Comment whether any scores seem unreasonable, providing input on why and how scores should be adjusted.
- Comment on any special circumstances that should be considered in addition to the included information when evaluating attributes of the FLK/EFL hogfish fishery.

**Table 3.** Attributes used to evaluate the stock risk rating and preliminary scores for Florida Keys and East Florida hogfish.

Biological Attributes	Description	High (1)	Medium (2)	Low (3)	FLK/EFL Hogfish Attribute Score	Notes
Estimated natural mortality (M)	Higher M indicates a more productive stock and allows for more risk tolerance.	<0.20	0.20-0.40	>0.40	1	SEDAR 37: Age varying; cumulative target M: 0.179
Age at maturity	Higher age at maturity is associated with lower productivity and results in greater risk of overexploitation.	Age at 50% female maturity (a50) > 4 yrs	a50: 2-4 yrs	a50 < 2 yrs	3	Age at 50% maturity from SEDAR 37: 0.9-1.6 years - protogynous hermaphroditism; age at transition ranges from 1-11 years and is socially mediated
<b>Final Biological Score</b>	Each attribute is scored either a 1 (High), a 2 (Medium), or a 3 (Low). The category score is the average of all scored attributes. If no attributes are scored, the category score is 2 (Medium).				<b>2</b>	
Human Dimension Attributes	Description	High (1)	Medium (2)	Low (3)		
Ability to regulate fishery	If management is unable to control harvest and large overages occur on a regular basis, this presents a higher risk of overfishing occurring and the stock status declining. Therefore, the more effective regulations are at limiting harvest to the ACL, the more risk tolerant regulations can be. There are many factors to keep in mind, such as variability and trends in landings, state compatability and consistency with federal regs, if there are significant landings in state waters, and to apply a discount for regulatory overages due to changing the ACL mid-season (shouldn't get a poor score because an ACL was suddenly cut in half mid-way through the season).	fishery consistently exceeds Total ACL (ex. 3+ out of 5 years) and/or exceeds Total ACL by more than 15%	fishery mostly kept below Total ACL (ex. Exceeds ACL 1-2 out of 5 years) and/or does not exceed ACL by more than 15%	fishery consistently kept below Total ACL	3	Neither sector ACL exceeded from 2018-2022

Potential for discard losses	If a species is prone to discard losses, either from large amounts of discarding, a high discard M, or both, then being too risk tolerant when setting catch limits can more easily lead to overfishing. In these situations, the Council should be less risk tolerant when setting catch limits for the stock. In considering proportions of dead discard removals, this attribute accounts for both proportions of caught fish that are released and discard mortality.	Dead discards are a significant proportion of the total catch (over 40%)	Dead discards are a moderate proportion of the total catch (20%-40%)	Dead discards very small component of total catch (<15%-20%)	3	Evaluate in assessment
Annual Commercial value	This attribute evaluates the importance (value) of a species to either the total annual revenue of all the species in the FMP or the relative importance of a species on trips that catch that species and considers the long-term implications of risk on that stock. Therefore, the higher the proportion of the value of the stock in question to the total annual value or total trip value, the less risk tolerant the Council should be when setting catch limits.	> 10% total annual revenue	Between 1% and 10% of total annual revenue	< 1% total annual revenue	2	From SEFSC Logbook Data 2018-2022 Avg % Annual Revenue: 3% Avg % Trip Revenue: 13%
		> 40% of total trip revenue, on average	Between 10% and 40% of total trip revenue, on average	< 10% total trip revenue, on average		
Recreational desirability	This attribute also evaluates the importance of a species, but to the recreational fishery. This is determined by estimating the proportion of trips reported targeting this species within an FMP. The assumption is the higher the proportion of trips reported targeting a species, the more important the species is to the recreational fishery overall. This attribute also considers long-term implications of risk on the stock, meaning the more important it is to the fishery, the less risk tolerant the Council should be when setting catch limits. DW was compared to the total targeted trips of SG.	> 5% trips report targeting this species	Between 1% and 5% of trips report targeting this species	< 1% trips report targeting this species	1	Standard MRIP queries do not separate effort data by gear.  From SEDAR 37 Hook & Line: 0.37% Spear: 23% Total: 0.76%

Social concerns	<p>This attribute examines concerns from a species related to communities in the South Atlantic. The categories are determined using the Social Quotient, which is calculated using data such as revenue, landings, and directed trips for a particular species in relation to all other species affecting communities in the South Atlantic. This attribute considers long-term costs and benefits over short-term effects. If a stock is of high social concern, then the Council should be less risk tolerant when setting catch limits. This is because if a biomass decline occurs for a stock with high social concern, it will have a stronger negative effect on fishing communities than stocks of less social concern.</p>	>13 communities highly reliant on this species	7-13 communities highly reliant on this species	<7 communities highly reliant on this species		
Final Human Dimension Score	<p>Each attribute is scored either a 1 (High), a 2 (Medium), or a 3 (Low). The category score is the average of all scored attributes. If no attributes are scored, the category score is 2 (Medium).</p>				2.25	
Environmental Attributes	Description			High (1)		
Ecosystem importance	<p>This attribute evaluates a species' importance to the ecosystem in the South Atlantic. The more important it is to the ecosystem, the less risk tolerant the Council should be when setting catch limits.</p>	<p>These 3 attributes are set up differently from all the rest in that they do not have 3 categories for scoring (Low, Medium, and High). Instead, these attributes function more like an on/off switch. The reasoning is two-fold. First, it is difficult to develop criteria for categorizing a situation as having a Low, Medium, or High effect. Second, there are very few species for which we have enough knowledge and/or data to even attempt to categorize them as being an important ecosystem species or having been affected by climate change.</p>		<p>Important ecosystem species: ex. Predator/prey sp, reef maintenance/building</p>		
Climate change	<p>This attribute evaluates effects on a stock due to climate change. These changes would likely affect stock productivity or the ability of the Council to successfully manage the stock. Stocks that are more likely to be impacted by climate change should be managed with less risk tolerance.</p>			<p>Affected by climate change: ex. Range expansion or collapse, Interaction with new sp, change in habitat availability/suitability</p>		

Other Environmental Variables	This attribute includes variables that aren't covered in either of the other two attributes, such as regime shifts, conditions unfavorable to recruitment, recruitment failure due to some unknown environmental variable, etc.		Regime shifts, environmentally driven recruitment collapse, etc.		
<b>Final Environmental Score</b>	This score is either blank (meaning these attributes have no bearing on the Final Risk Score) or is a 1 if one or more attributes have been scored.			<b>0</b>	
<b>Final Risk Score</b>	Average of category scores. If Environmental Score is 0 (no scored attributes), that category is not included in the Final Risk Score.			<b>2.125</b>	
				<b>Stock Risk Rating</b>	<b>Medium</b>