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# U.S. Gulf of Mexico Vermillion Snapper **2023 Interim Analysis**

Gulf of Mexico Fishery Management Council  
Scientific and Statistical Committee

September 2023

# 2023 Interim Analysis

- Last assessment SEDAR 67: Terminal year 2017
- Catch advice adjusted using index-based harvest control rule and both 3- or 5-year moving average of the:
  - G-FISHER survey index of abundance

$$C_{y+1} = C_{ref} * \left( \frac{1}{3 \text{ (or 5)}} \sum_{k=y-2 \text{ (or -4)}}^y I_k \right) / \left( \frac{1}{3 \text{ (or 5)}} \sum_{Y_{ref}-1 \text{ (or -3)}}^{Y_{ref}+1} I_{ref} \right)$$

The equation is presented with two boxed components. The first box, titled "Recent Mean Index ( $I_k$ )", contains the term  $\left( \frac{1}{3 \text{ (or 5)}} \sum_{k=y-2 \text{ (or -4)}}^y I_k \right)$ . The second box, titled "Reference Mean Index ( $I_{ref}$ )", contains the term  $\left( \frac{1}{3 \text{ (or 5)}} \sum_{Y_{ref}-1 \text{ (or -3)}}^{Y_{ref}+1} I_{ref} \right)$ .

- *Reference Year ( $Y_{ref}$ )* = 2018; the first year following the terminal year of the assessment (2017)
  - $C_{ref}$  = 3.11 reference catch million pounds whole weight (CHTS currency)
  - $C_{ref}$  = 5.88 reference catch million pounds whole weight (FES currency)



# How the CHTS 2018 $C_{ref}$ was 'converted' to FES units

- Interim analysis requires reference ABC catch advice from year immediately following terminal year of assessment
  - For SEDAR 67, TY = 2017
- 2018 ABC only available from SEDAR 45 projections
  - SEDAR 45 assessment and projections used CHTS currency
- During SEDAR 67, the SEDAR 45 model projections were updated to FES to facilitate comparisons
  - Produced the OFL value of 6,760,000
- For this IA, SEDAR 45 projections were re-run following the S45 accepted ABC approach:
  - Project OY (75% of  $F_{SPR30\%}$ ) and set ABC as the average of 2017-2021
  - Result was 5,880,000 lb ww, for reference, the SEDAR 67 ABC 7,270,000



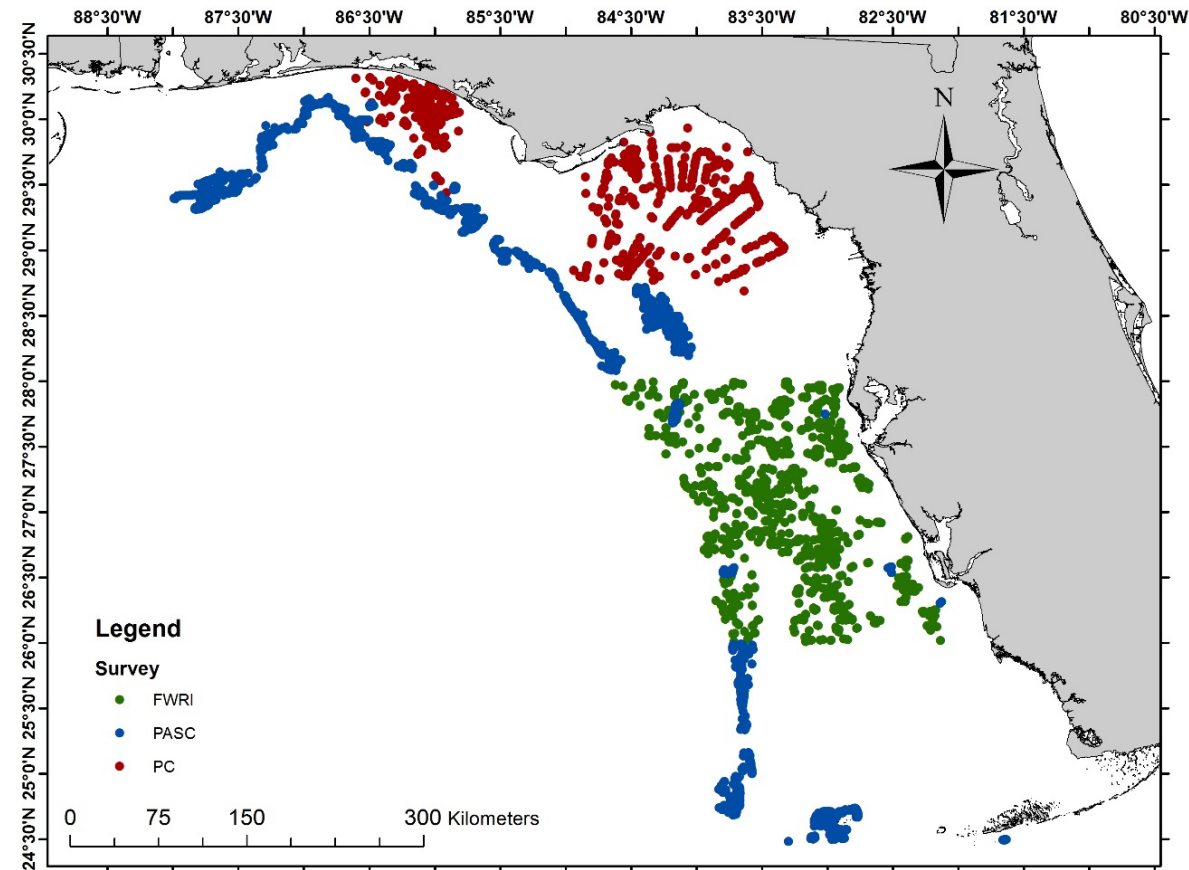
# Reference Catch

- 2018-2023 ABC set using constant catch projections from SEDAR 45
  - SEDAR 45 projection used average catches (2017-2021)
  - 3.11 mp ww (ABC=ACL) in CHTS currency
- SEDAR 45 projections updated with FES currency (used in SEDAR 67)
  - FES based OFL of 6.76 mp ww (**ABC = 5.88**)
  - CHTS based OFL of 3.49 mp ww (ABC = 3.11)
- For reference, SEDAR 67 ABC 7.270

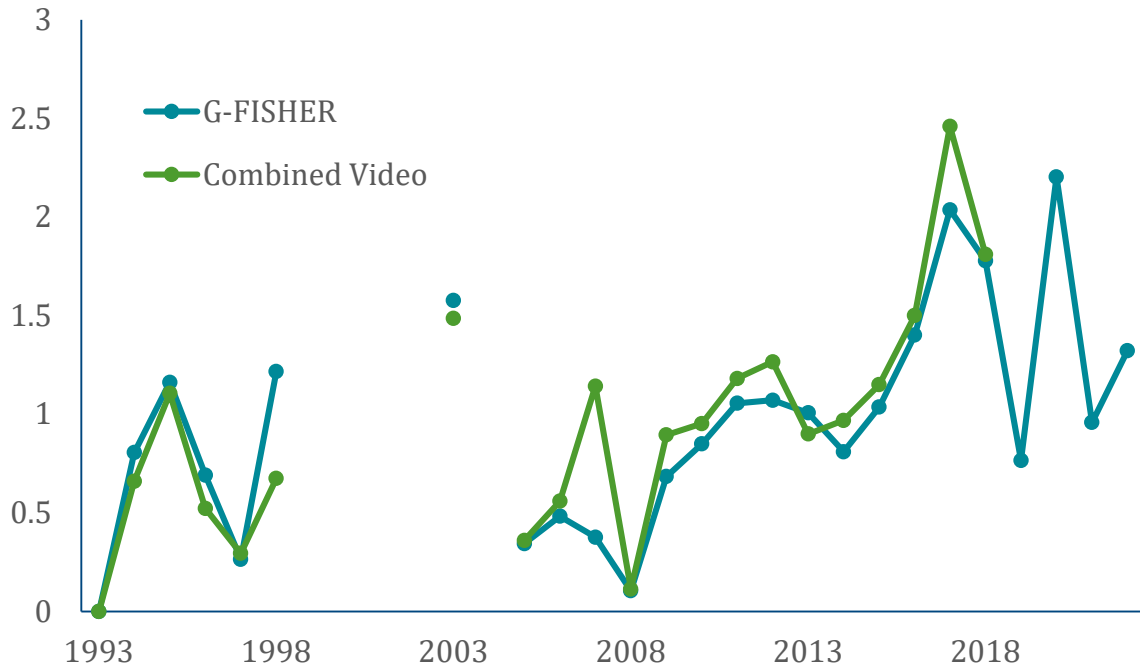


# G-FISHER: Updated Vermilion Snapper Index

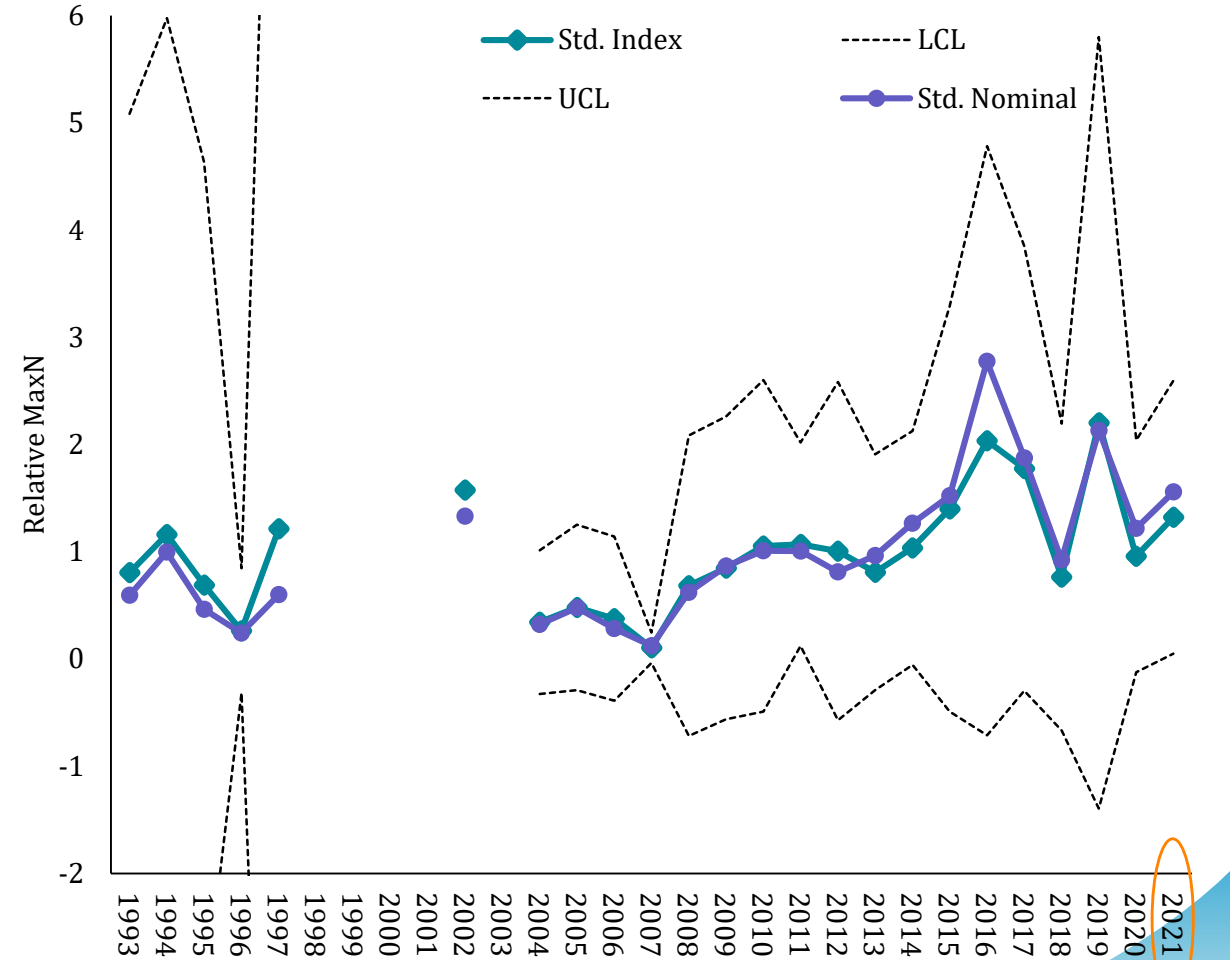
- SEDAR 67 – combined video index developed
- Used data from historical survey footprints:
  - **Pascagoula** – 1993 onward
  - **Panama City** – 2006 onward
  - **FWRI** – 2010 onward
- Surveys conducted independently through 2019
- Beginning in 2020, survey efforts combined under G-FISHER



# Updated Index



Vermilion Snapper Combined Video Index



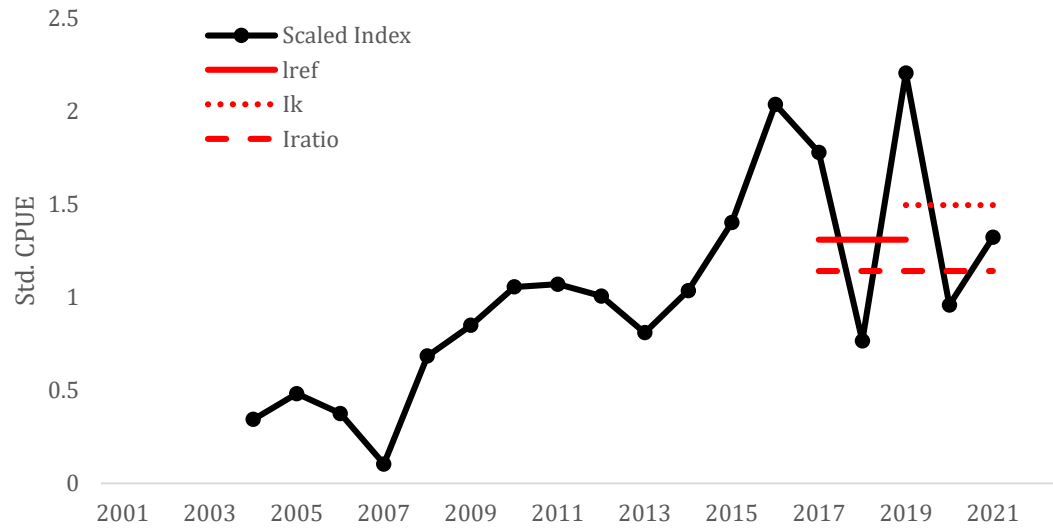
# Adjust ABC

3 yr. moving avg:

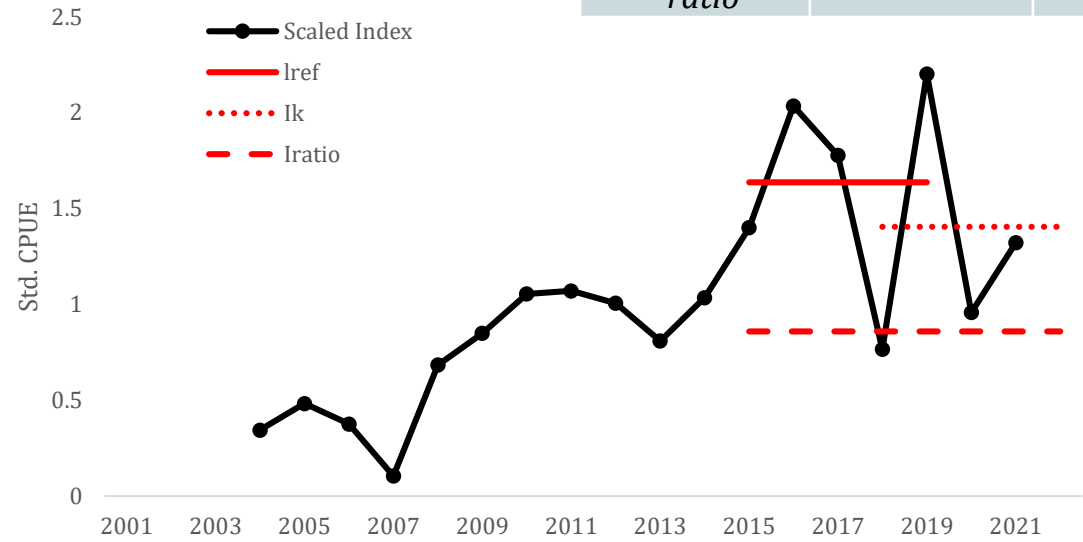
5 yr. moving avg:

Value	3 yr avg	5 yr avg
$I_{ref}$	1.309	1.637
$I_k$	1.495	1.406
$I_{ratio}$	1.142	0.859

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\* $C_{ref}$  = 5.88 million pounds whole weight (FES)  
 = 3.11 million pounds whole weight (CHTS)

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**$C_{ref}$  3-yr adjust = 6.712 million pounds ww (FES)     $C_{ref}$  5-yr adjust = 5.049 million pounds ww**

# Preliminary Catch Advice Summary

- Reference ABC Catch (2018): 3.11 mp ww (CHTS currency)
  - 2023 Final Rule: ACL = 0.75 ABC = 5.452 mp ww (FES)
    - SEDAR 67 ABC = 7.270 (FES)

Currency	3-year avg.	5-year avg.
FES	6.712	5.049
CHTS	3.550	2.671

- Update with G-FISHER index:

- Current 2023 ACL monitoring:

	Species Complex	Season	Sector	Sector Landings (lb)*	Total Landings (lb)*	ACL(lb)*	ACL%	Dataset	Current Status
9/19/23	Vermilion snapper		Recreational	659,537	1,441,601	3,110,000	46.4	CHTS	OPEN
			Commercial	782,064				N/A	
9/25/23	Vermilion snapper		Recreational	659,537	1,457,176	5,452,500	26.7	FES	OPEN
			Commercial	797,639				N/A	



# SEDAR 67 projections

Table 2. Yield projections at 75% of  $F_{SPR30\%}$  from SEDAR 67.

Year	SSB	SSB/SSB <sub>FSPR30%</sub>	SSB/MSST	SSB/SSB <sub>0</sub>	Yield (mp ww)
2021	3.73E+14	1.85	3.70	0.55	9.37
2022	3.28E+14	1.62	3.25	0.49	7.87
2023	2.96E+14	1.47	2.94	0.44	6.89
2024	2.75E+14	1.36	2.72	0.41	6.29
2025	2.61E+14	1.30	2.58	0.39	5.95
2026	2.52E+14	1.25	2.50	0.37	5.74
2027	2.46E+14	1.22	2.44	0.37	5.62
2028	2.42E+14	1.20	2.40	0.36	5.54
2029	2.39E+14	1.18	2.37	0.35	5.48
2030	2.37E+14	1.17	2.34	0.35	5.45

Current Benchmarks	
SSB <sub>2017</sub>	352,682
$F_{Current}$ (geo. mean: 2015-2017)	0.075
SSB <sub>2017</sub> / SSB <sub>0</sub> (SPR <sub>2017</sub> )	0.52
SSB <sub>2017</sub> / SSB <sub>SPR30%</sub>	1.75
SSB <sub>2017</sub> / MSST	3.5
--MSST Overfished?	No
$F_{Current}$ / MFMT	0.56
--Overfishing?	No

Updated	3-year avg.	5-year avg.
FES	6.712	5.049
CHTS	3.550	2.671

Table source:

<https://sedarweb.org/documents/report-of-the-gulf-of-mexico-ssc-review-of-the-sedar-67-vermilion-snapper-assessment/>



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