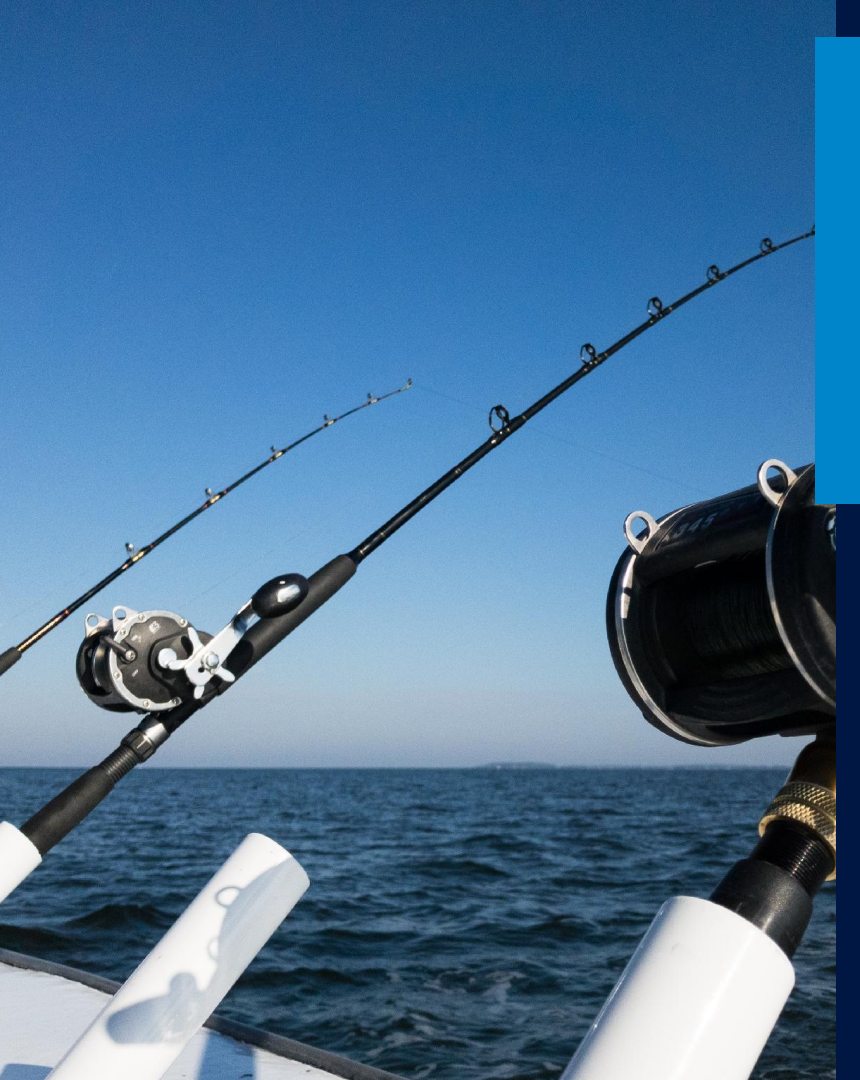




Marine Recreational Information Program

Calibrated Fishing Effort and Catch Data



NOAA Fisheries Office of Science and Technology
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

Outline



1. Overview of Fishing Effort Survey calibration
2. Gulf effort comparisons
3. Gulf catch comparisons for priority species
4. Current status and 2026 estimates

Overview of Fishing Effort Survey Calibration

Fishing Effort Survey Overview

Objective

Estimates the total number of fishing trips (effort) for **shore and private boat anglers** (does not include for-hire).

Geographic Scope

Maine to Alabama and in Hawaii



*LA (1981-2013), MS (1981-2025)

Fishing Effort Survey Revised in 2026

- Began implementing the improved [Fishing Effort Survey](#) according to existing [regional survey administration schedules](#).
- Revised design developed in response to concerns from the recreational fishing community and partners that our **shore and private boat fishing effort** estimates may be too high
 - Revised survey improves the accuracy of estimates by mitigating potential overreporting of fishing trips.
 - This follows [extensive testing](#) and a favorable [independent peer review](#) that indicated the revised design offers improved utility for stock assessments and management decisions.

Key Improvements Compared to Previous FES Design

- **Revised question order:** The sequence of fishing activity questions changed to improve reporting accuracy.
- **Increased frequency of administration:** The survey is mailed monthly instead of every two months.
 - **Updated estimation methods corresponding to design:** improve the precision and stability of the estimates.

Key Differences Compared to Previous FES Design

Original FES

15 How many days did this person go recreational saltwater fishing from the SHORE in <Merged State>?

The shore includes docks, bridges, causeways, beaches, banks, or any other shore-based place or area. Do not include freshwater fishing.

☐ Did not recreational saltwater fish from shore in last 12 months → **Go to question 16**

Number of days saltwater shore fishing in Jan. and Feb. of 2024

Number of days saltwater shore fishing in last 12 months, including Jan. and Feb.

16 How many days did this person go recreational saltwater fishing from a private or rental BOAT that returned to shore in <Merged State>?

Do not include freshwater trips or trips where a paid captain or crew helped locate and catch fish.

☐ Did not recreational saltwater fish from private boat in last 12 months

Number of days saltwater boat fishing in Jan. and Feb. of 2024

Number of days saltwater boat fishing in last 12 months, including Jan. and Feb.

Improved FES

15 How many days did this person go recreational saltwater fishing from the SHORE in <Merged State>?

The shore includes docks, bridges, causeways, beaches, banks, or any other shore-based place or area. Do not include freshwater fishing or fishing for shellfish.

☐ Did not recreational saltwater fish from shore in last 12 months → **Go to question 16**

Number of days saltwater shore fishing in last 12 months, including Jan. and Feb.

Number of days saltwater shore fishing in Jan. of 2024

Number of days saltwater shore fishing in Feb. of 2024

16 How many days did this person go recreational saltwater fishing from a private or rental BOAT that returned to shore in <Merged State>?

Do not include freshwater trips, shellfishing trips, or trips where a paid captain or crew helped locate and catch fish.

☐ Did not recreational saltwater fish from private boat in last 12 months

Number of days saltwater boat fishing in last 12 months, including Jan. and Feb.

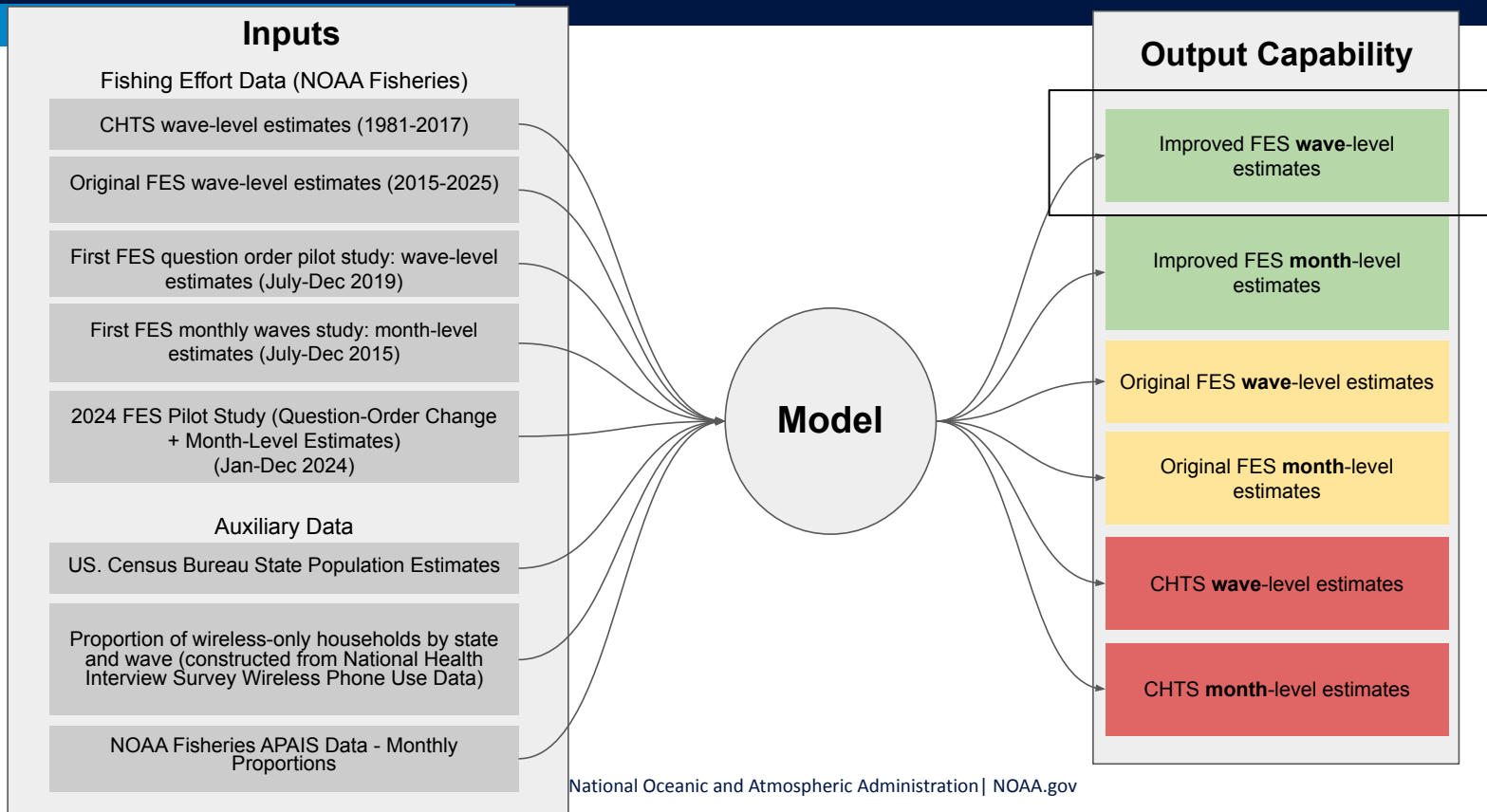
Number of days saltwater boat fishing in Jan. of 2024

Number of days saltwater boat fishing in Feb. of 2024

2026 Calibration Model

- **Builds on peer-reviewed model** previously developed to calibrate historical recreational fishing estimates from the Coastal Household Telephone Survey (1981–2017) to the original FES scale in 2018. However, the new model **directly calibrates CHTS, original FES, and improved FES** effort estimates rather than using prior model outputs.
- Uses a **Bayesian hierarchical modeling approach** and a longer time series of mail data than the prior Fay–Herriot SME model, resulting in more reliable and consistent historical estimates.
- Model **favorably peer-reviewed** in late 2025 via a 2-day [peer-review workshop](#); provided **opportunity for both partner and public comment** and **incorporated key feedback** from review (on both model and preliminary results) prior to implementing model.

2026 Calibration Model Schematic



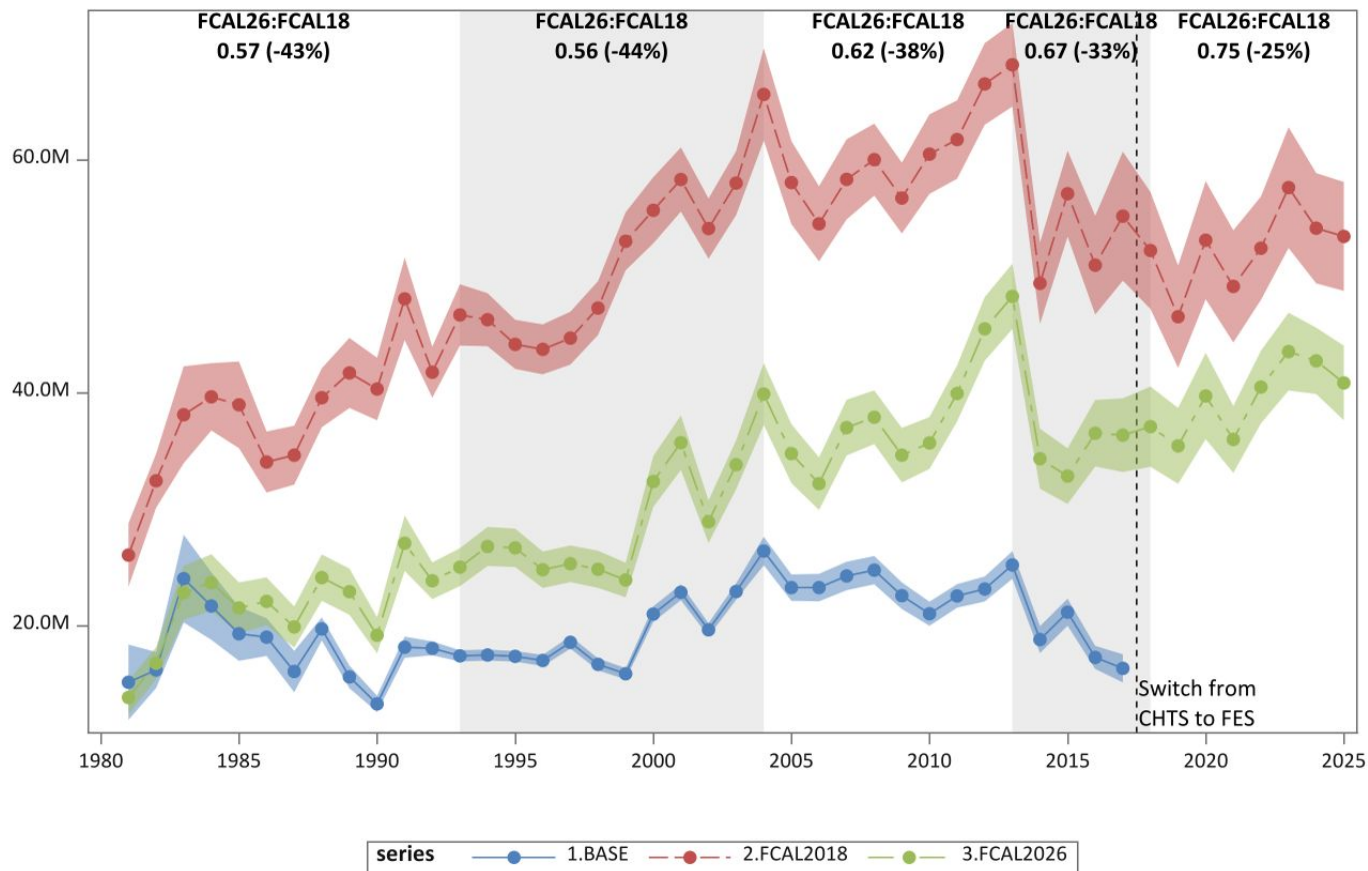
A photograph of several fishing rods mounted on a boat, viewed from the side. The rods are black with gold-colored reels. The boat is moving through blue water, leaving a white wake. In the background, there are green hills under a blue sky with white clouds. A semi-transparent blue rectangle is overlaid on the left side of the image, containing the title text.

Gulf Effort Comparisons

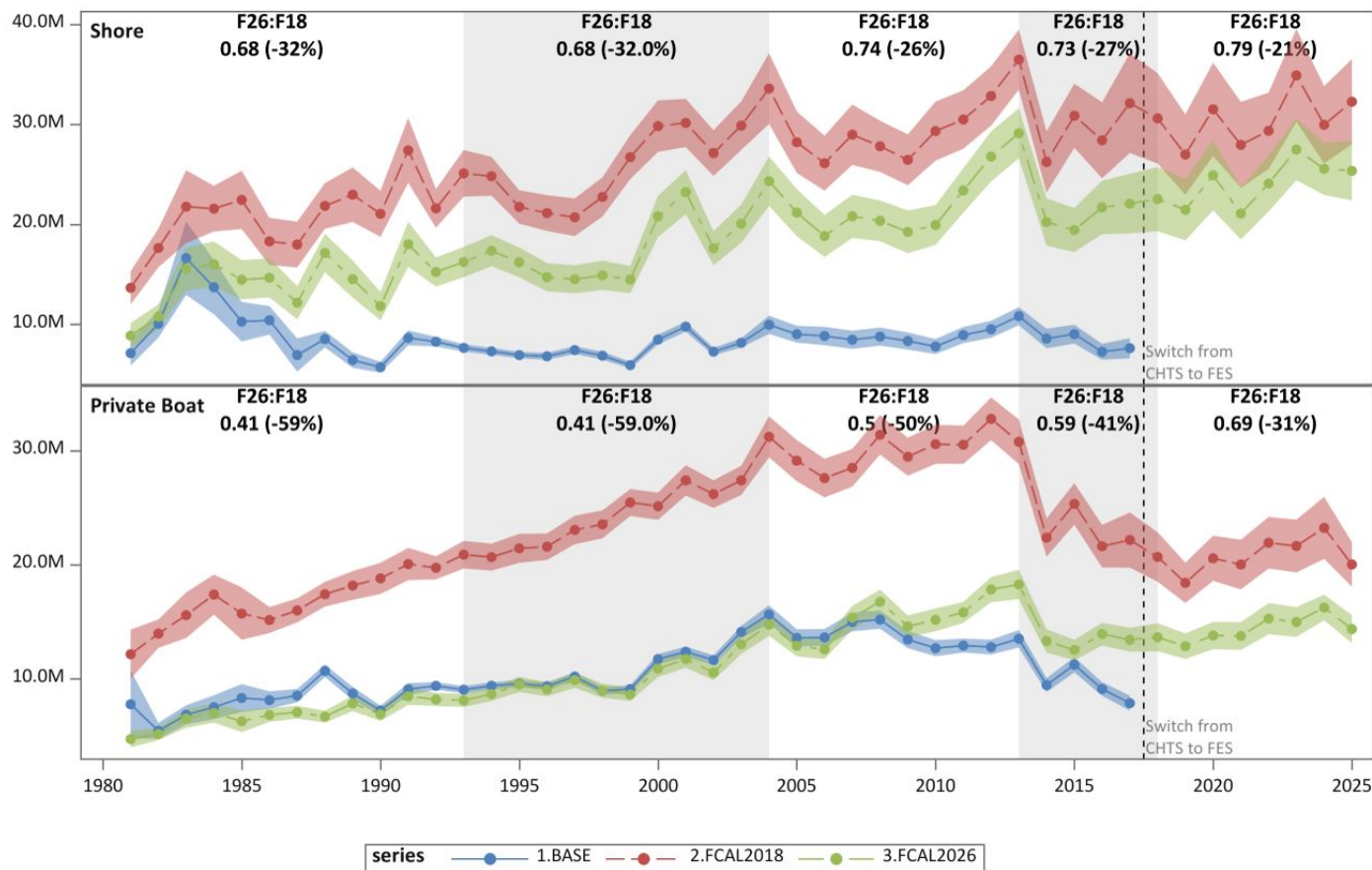
Changes to Effort Time Series - Key Takeaways

- Calibrated estimates are lower than original FES estimates
- Larger relative reductions for Private Boat compared to Shore
- Larger relative reductions in lower activity waves
- Differences across time series
 - Louisiana present 1981-2013, absent 2014-2025

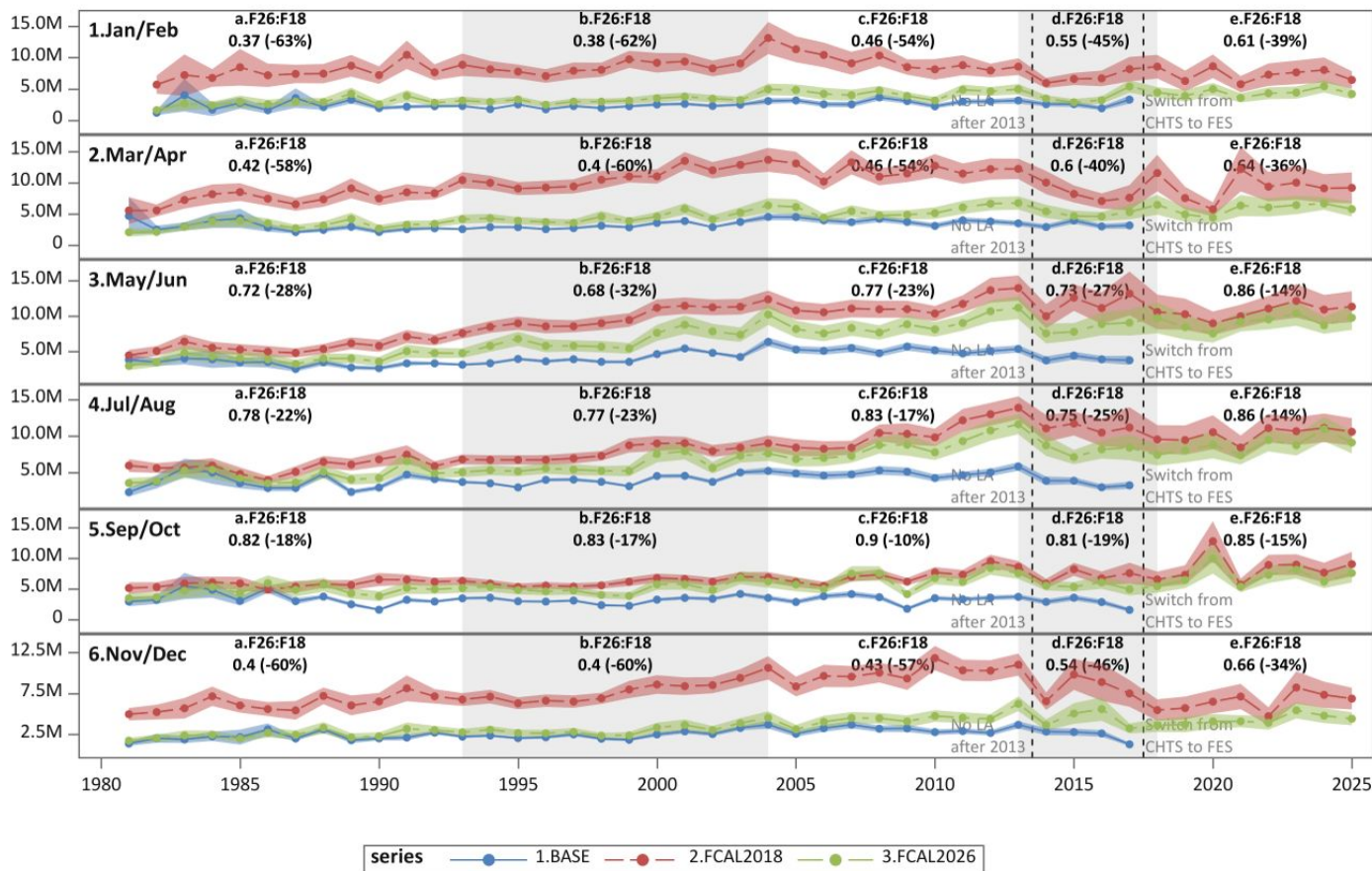
Gulf - Annual Effort (All modes)



Gulf - Annual Effort by Fishing Mode



Gulf - Wave Effort by Year (all modes)



Gulf - Global Effort Change Summary 1981-2025

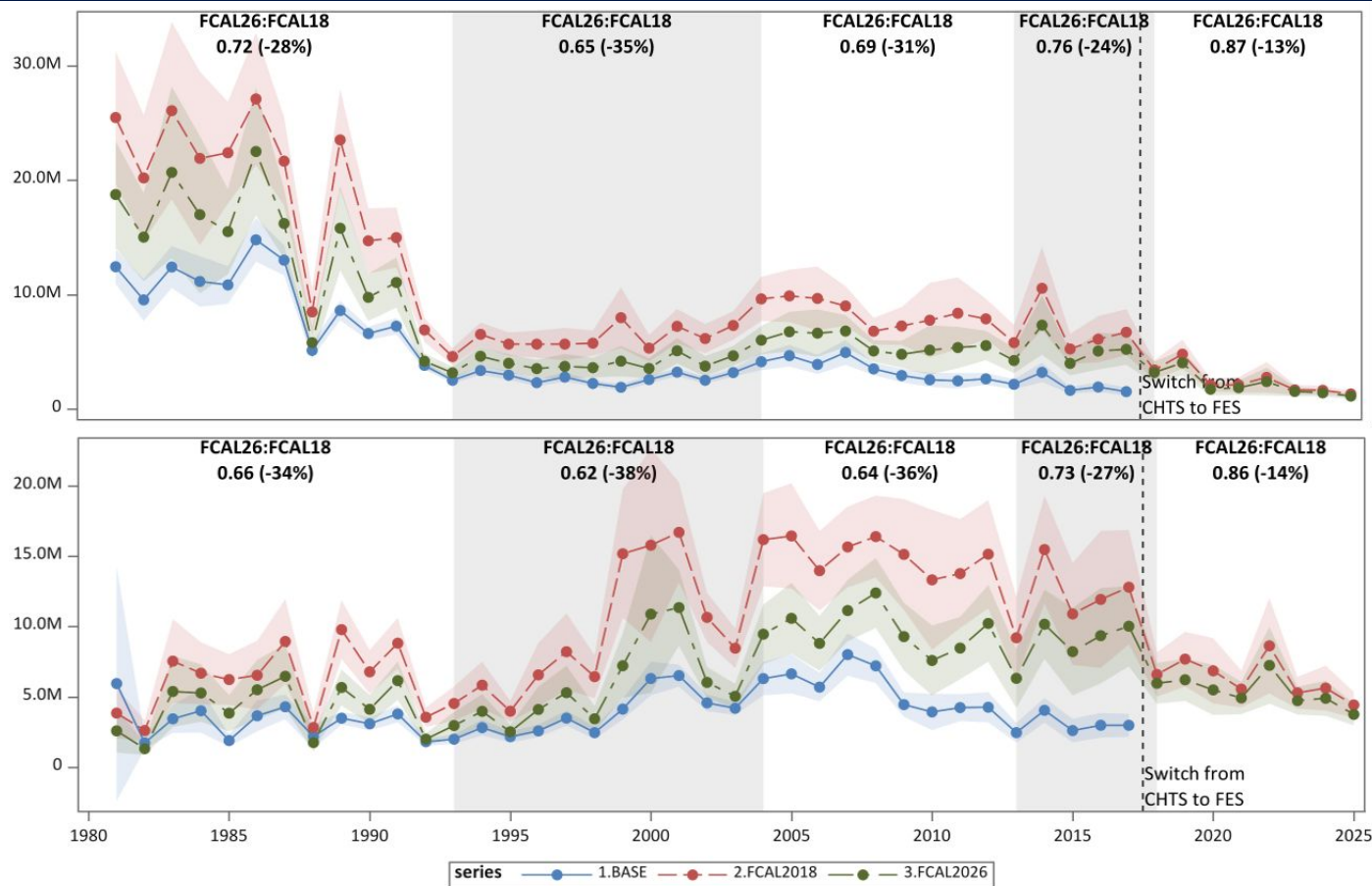
Effort Category	Wave	Ratio (FCAL26:FCAL18)	% Change
1. All Modes Combined	All Waves Combined	0.63	-37
	Wave 1 (Jan/Feb)	0.45	-55
	Wave 2 (Mar/Apr)	0.48	-52
	Wave 3 (May/Jun)	0.75	-25
	Wave 4 (Jul/Aug)	0.80	-20
	Wave 5 (Sep/Oct)	0.84	-16
	Wave 6 (Nov/Dec)	0.46	-54
2. Private Boat	All Waves Combined	0.50	-50
	Wave 1 (Jan/Feb)	0.39	-61
	Wave 2 (Mar/Apr)	0.32	-68
	Wave 3 (May/Jun)	0.63	-37
	Wave 4 (Jul/Aug)	0.71	-29
	Wave 5 (Sep/Oct)	0.66	-34
	Wave 6 (Nov/Dec)	0.33	-67
3. Shore	All Waves Combined	0.72	-28
	Wave 1 (Jan/Feb)	0.48	-52
	Wave 2 (Mar/Apr)	0.61	-39
	Wave 3 (May/Jun)	0.85	-15
	Wave 4 (Jul/Aug)	0.88	-12
	Wave 5 (Sep/Oct)	1.00	0
	Wave 6 (Nov/Dec)	0.59	-41

Gulf Catch Comparisons

How the Effort Calibration Impacts Catch Estimates

- **Revised catch time series are systematically lower**
- **Reductions variable by species:** catch differences due to effort estimates varying across states, fishing modes (private boat v. shore), time of year (2-month “waves”), and year ranges within the full time series.
- **Gulf:** LA-FLw 1981-2013, MS-FLw 2014-2025
- **Select Species:** King Mackerel, Red Snapper, Gag, Gray Triggerfish, Vermilion Snapper, Gray Snapper
- **Landings (A+B1) and Releases (B2)**

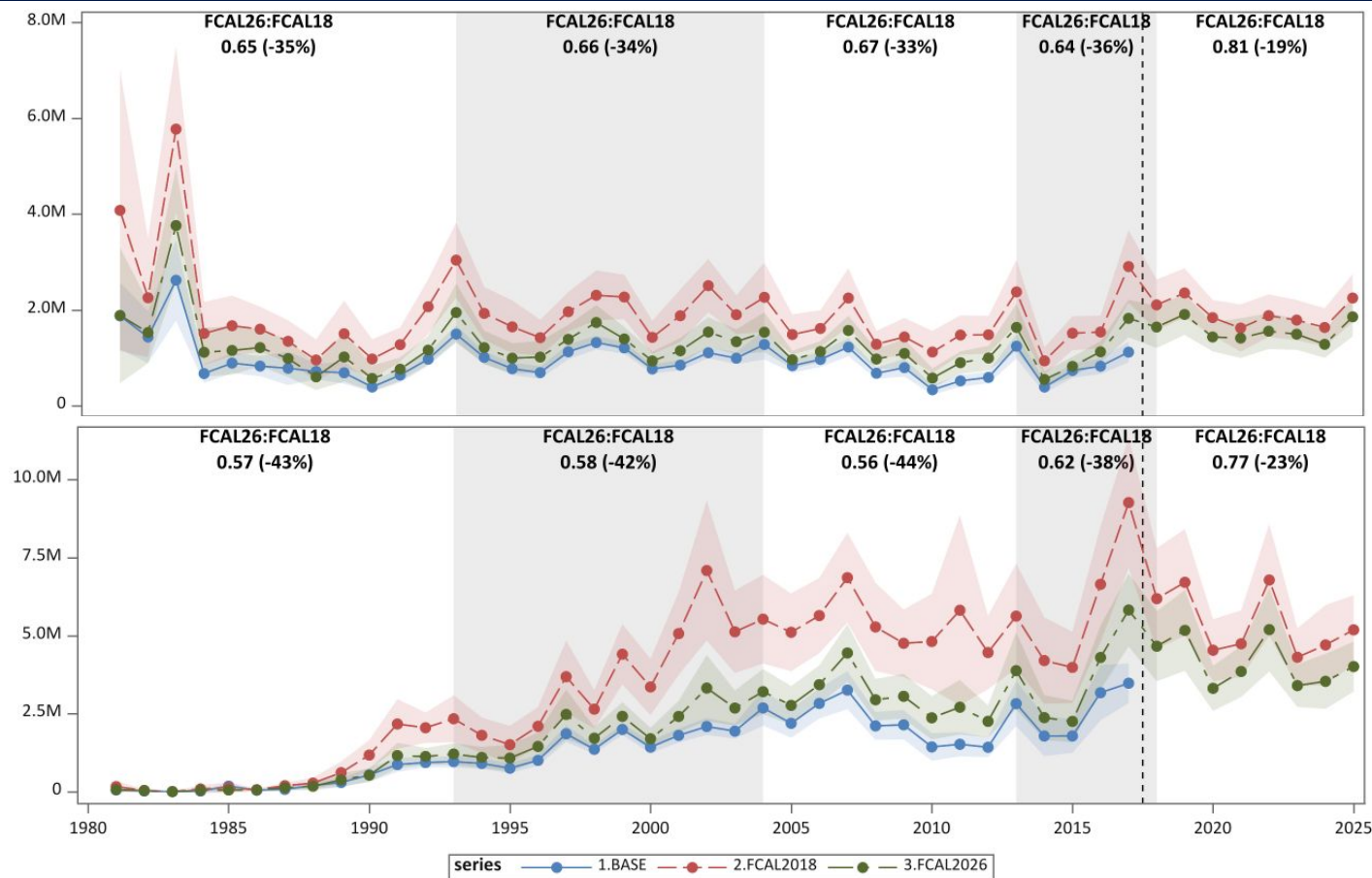
King Mackerel - Annual Landings (A+B1) and Releases (B2)



Landings (no.)

Releases (no.)

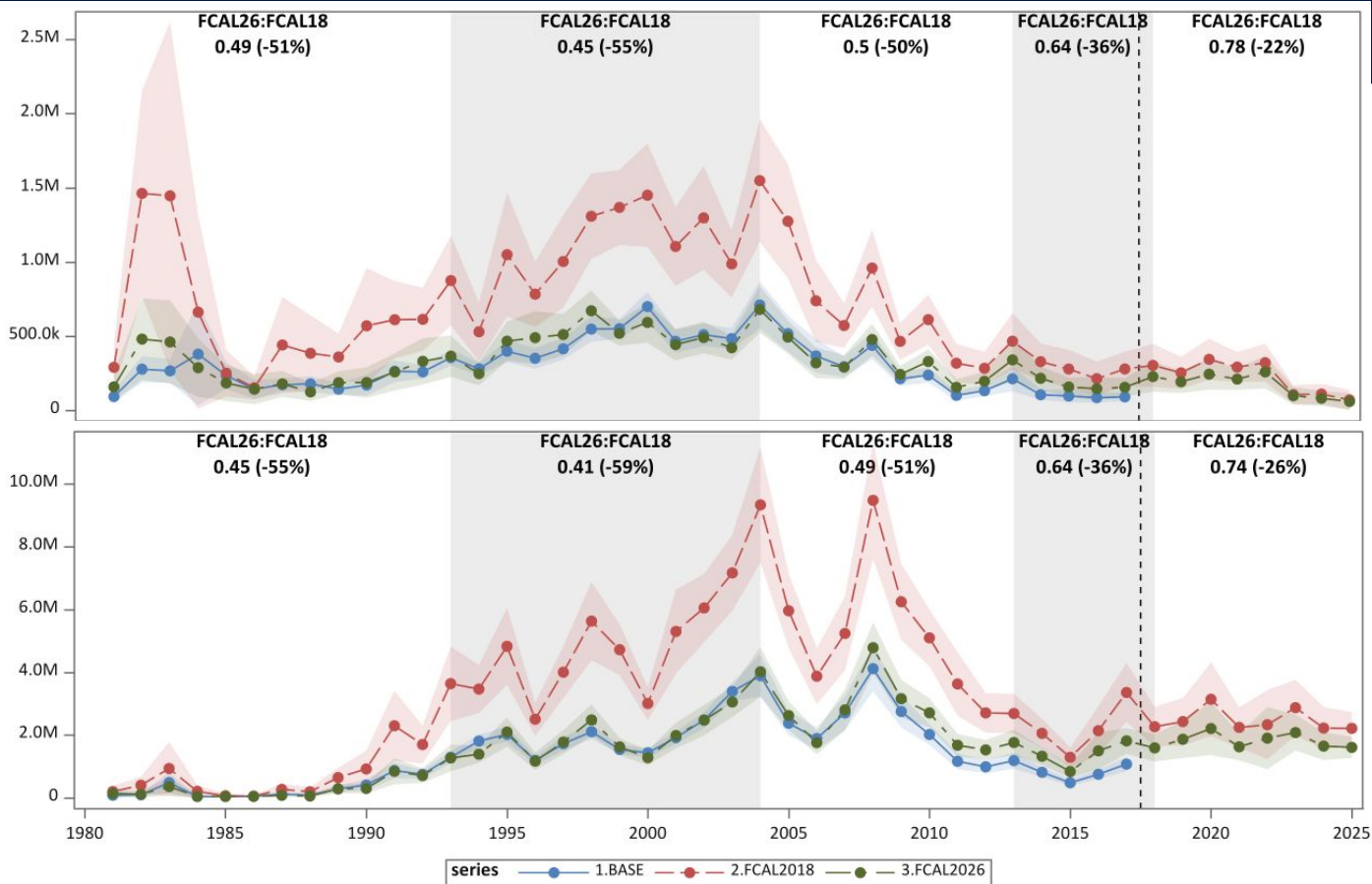
Red Snapper - Annual Landings and Releases



Landings (no.)

Releases (no.)

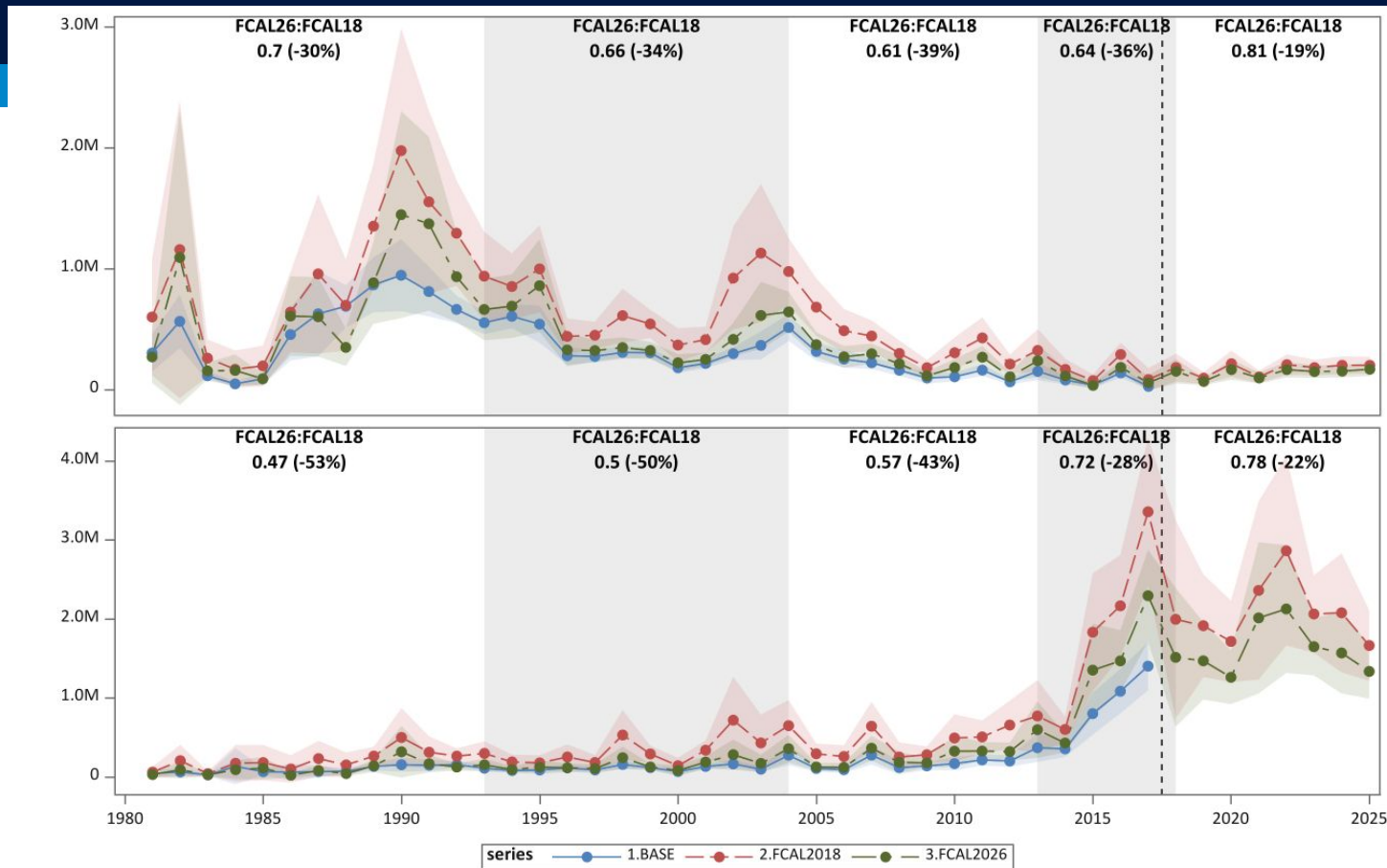
Gag - Annual Landings and Releases



Landings (no.)

Releases (no.)

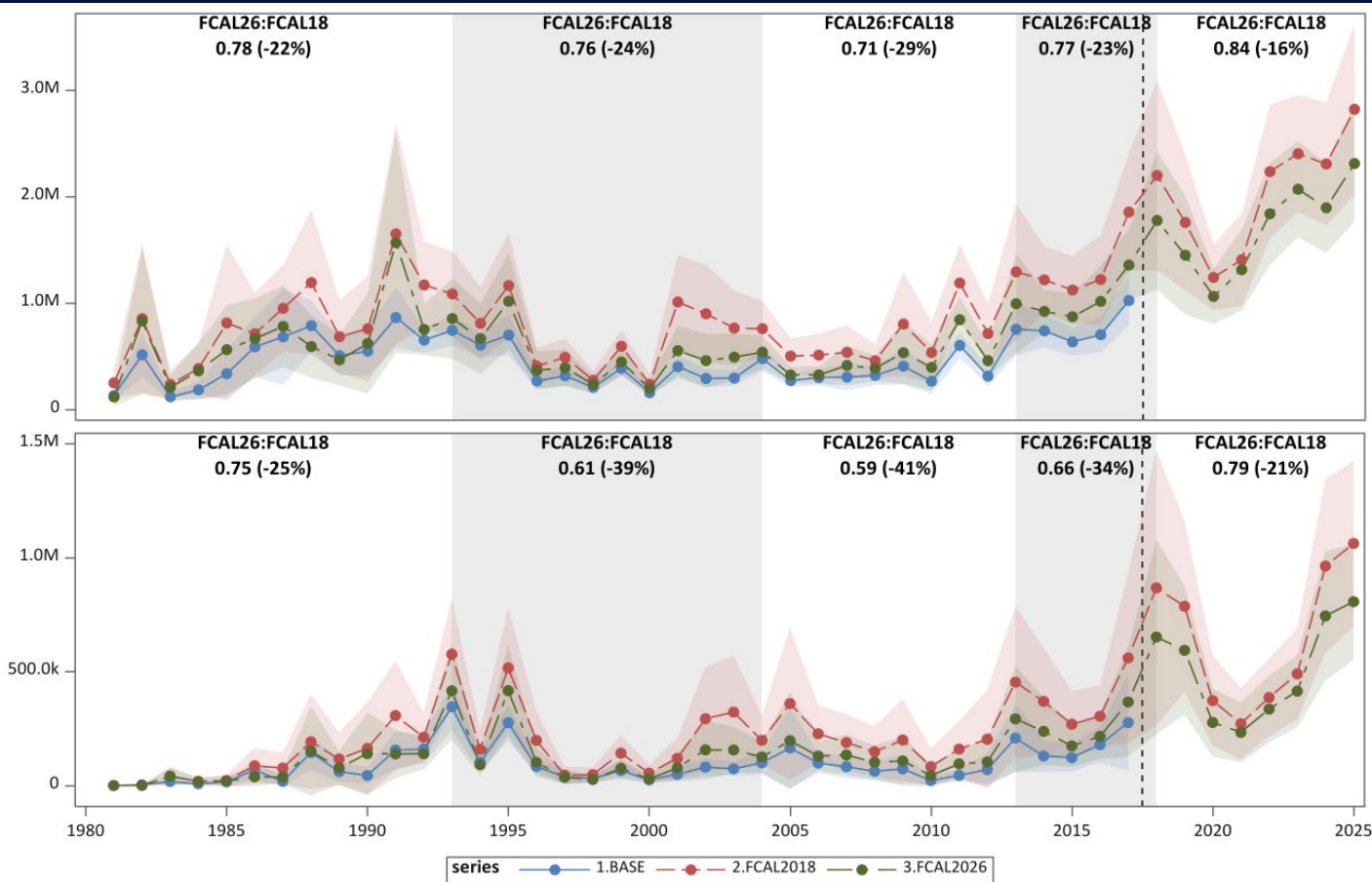
Gray Triggerfish - Annual Landings and Releases



Landings (no.)

Releases (no.)

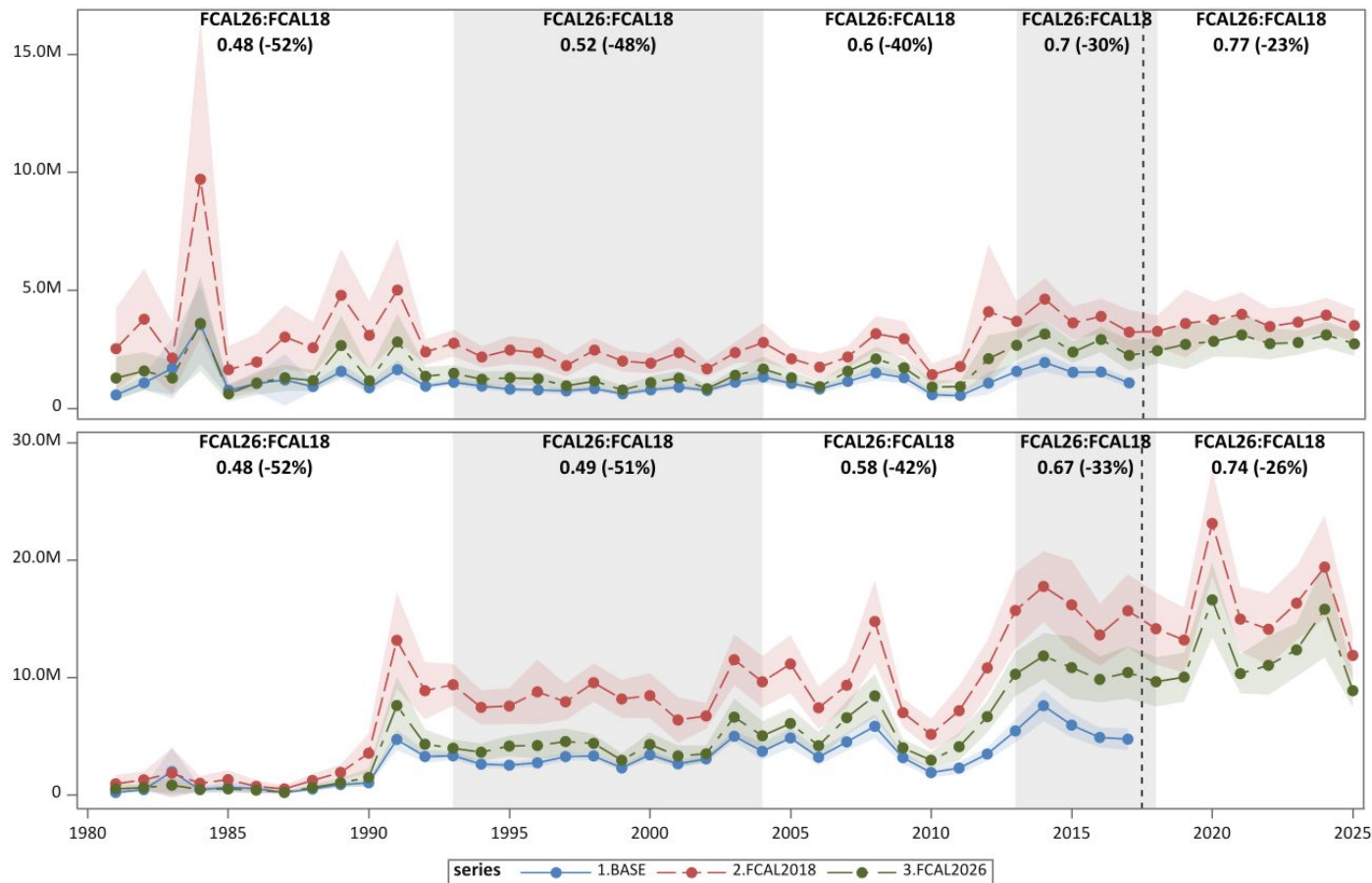
Vermilion Snapper - Annual Landings and Releases



Landings (no.)

Releases (no.)

Gray Snapper - Annual Landings and Releases



Landings (no.)

Releases (no.)

Gulf - Global Catch Change Summary 1981-2025

Species	Mode	% of Total Catch (FCAL26)	Landings Ratio (FCAL26:FCAL18)	Landings % Chg	Releases Ratio (FCAL26:FCAL18)	Releases % Chg
KING MACKEREL	All Modes Combined	100	0.66	-34	0.60	-40
	Private Boat	46	0.49	-51	0.47	-53
	Shore	28	0.83	-17	0.78	-22
	Combined For-Hire Modes	26	1.00	0	1.00	0
RED SNAPPER	All Modes Combined	100	0.68	-32	0.62	-38
	Private Boat	74	0.57	-43	0.57	-43
	Shore	1	0.81	-19	0.78	-22
	Combined For-Hire Modes	26	1.00	0	1.00	0
VERMILION SNAPPER	All Modes Combined	100	0.78	-22	0.69	-31
	Private Boat	49	0.61	-39	0.62	-38
	Shore	1	0.98	-2	0.74	-26
	Combined For-Hire Modes	50	1.00	0	1.00	0

Gulf - Global Catch Change Summary 1981-2025

Species	Mode	% of Total Catch (FCAL26)	Landings Ratio (FCAL26:FCAL18)	Landings % Chg	Releases Ratio (FCAL26:FCAL18)	Releases % Chg
GAG	All Modes Combined	100	0.47	-53	0.50	-50
	Private Boat	73	0.39	-61	0.44	-56
	Shore	13	0.73	-27	0.76	-24
	Combined For-Hire Modes	14	1.00	0	1.00	0
GRAY SNAPPER	All Modes Combined	100	0.59	-41	0.62	-38
	Private Boat	47	0.51	-49	0.53	-47
	Shore	49	0.70	-30	0.72	-28
	Combined For-Hire Modes	4	1.00	0	1.00	0
GRAY TRIGGERFISH	All Modes Combined	100	0.69	-31	0.69	-31
	Private Boat	61	0.47	-53	0.63	-37
	Shore	2	0.76	-24	0.70	-30
	Combined For-Hire Modes	37	1.00	0	1.00	0

Gulf - Catch Trend Agreement Metrics

- Basic measures of agreement that ignore scaling differences between FCAL2026 and FCAL2018 series
- **Macro Trend Correlation [r]**
 - **Definition:** Pearson correlation coefficient calculated on annual estimates, Y_{t_FC2026} Y_{t_FC2018}
 - **What It Measures:** Long-term trajectory and multi-decade cycle alignment between calibrations.
- **Annual Dynamics Correlation [r(ΔY)]**
 - **Definition:** Pearson correlation coefficient calculated on year-to-year first order differences:
$$\Delta Y_{t_FC2026} = Y_{t_FC2026} - Y_{t-1_FC2026} \qquad \Delta Y_{t_FC2018} = Y_{t_FC2018} - Y_{t-1_FC2018}$$
 - **What It Measures:** Agreement on short-term annual volatility (spikes, drops, and noise).
- **Directional Concordance [% Sign Match]**
 - **Definition:** Percentage of years where both calibrations agree on the direction of annual change: $\text{sgn}(\Delta Y_{FC2026}) = \text{sgn}(\Delta Y_{FC2018})$
 - **What It Measures:** Operational agreement on year-over-year directional shifts.

Gulf - Catch Trend Agreement Metrics 1981-2025

		Landings Agreement Metrics			Releases Agreement Metrics		
Species	Mode	Macro Trend r (Level)	Annual Dynamics r (Diff)	Directional Match %	Macro Trend r (Level)	Annual Dynamics r (Diff)	Directional Match %
KING MACKEREL	All Modes Combined	0.94	0.95	82	0.95	0.95	93
	Private Boat	0.84	0.94	82	0.89	0.85	91
	Shore	0.97	0.94	95	0.99	0.99	95
RED SNAPPER	All Modes Combined	0.93	0.96	95	0.96	0.92	93
	Private Boat	0.89	0.97	95	0.95	0.91	89
	Shore	0.99	0.98	100	0.86	0.71	84
VERMILION SNAPPER	All Modes Combined	0.98	0.91	89	0.99	0.97	89
	Private Boat	0.97	0.91	93	0.99	0.96	89
	Shore	1.00	1.00	100	0.99	0.99	83

Gulf - Catch Trend Agreement Metrics 1981-2025

		Landings Agreement Metrics			Releases Agreement Metrics		
Species	Mode	Macro Trend r (Level)	Annual Dynamics r (Diff)	Directional Match %	Macro Trend r (Level)	Annual Dynamics r (Diff)	Directional Match %
GAG	All Modes Combined	0.94	0.87	89	0.94	0.96	91
	Private Boat	0.90	0.86	93	0.94	0.96	95
	Shore	0.87	0.84	95	0.98	0.96	98
GRAY SNAPPER	All Modes Combined	0.81	0.92	95	0.97	0.96	89
	Private Boat	0.76	0.93	86	0.95	0.94	93
	Shore	0.94	0.95	95	0.98	0.96	93
GRAY TRIGGERFISH	All Modes Combined	0.96	0.92	82	0.99	0.95	89
	Private Boat	0.94	0.91	84	0.99	0.95	86
	Shore	0.99	0.98	100	0.98	0.97	93

Current Status and 2026 Estimates



Current Status

- MRIP Queries
 - 2026 Calibration Comparisons for original FES (PRE) and calibrated (CAL) catch and effort estimates
 - Standard queries now return calibrated estimates
- MRIP Data Downloads
 - Estimate datasets, public-use (trip,catch,size,fes) datasets are all updated for the calibrated estimates
- **Data products available for 1981-2025**

2026 Estimation

- **Waves 1-3 (Jan/Feb,Mar/Apr,May/Jun) 2026**
 - Targeting late Oct/early November for release of preliminary estimates for all three waves
 - Will also produce back-calibrated “original FES” estimates and make available in the 2026 Calibration Comparison queries

2026 Estimation

- **Waves 4-5 2026**
 - Plan to release individual waves
 - Will release Waves 4 & 5 together if delayed
- **Wave 6 and Final 2026**
 - Plan to release on schedule
 - mid-February 2027
 - mid-April 2027



Questions?

richard.cody@noaa.gov